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FIRST ANNUAL REPORT

OF THE

SECRETARY

OF THE

STATE BOARD OF HEALTH

OF THE

STATE OF VERMONT

FOR THE

Year Ending Sept. 1st, 1887.

RUTLAND:
THE TUTTLE COMPANY, OFFICIAL PRINTERS.
1888.

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Bill regulating practice
of Medicine & Surgery — of Vermont,
see page 129 —

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STATE BOARD OF HEALTH,

OFFICE OF THE SECRETARY,
RUTLAND, September 1st, 1887.

His Excellency

EBENEZER J. ORMSBEE,

Governor.

SIR:

In compliance with the law of this State I have the honor, herewith, to transmit the accompanying Report for the year ending September 1st, 1887.

Very Respectfully,

Your Obedient Servant,

CHARLES L. ALLEN,

Secretary.

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No. 93.—AN ACT TO PREVENT THE SPREADING OF CONTAGIOUS DISEASES AND TO ESTABLISH A STATE BOARD OF HEALTH.

It is hereby enacted by the General Assembly of the State of Vermont:

SECTION 1. The governor, by and with the advice and consent of the senate, shall appoint three persons as members of a State Board of Health for the State of Vermont. The term of office of said members of said board shall be so arranged that the term of one of them shall expire at the end of every second year. Vacancies in said board shall be filled as they occur by appointment of the governor, and confirmation by the senate when next in session.

SEC. 2. The members of said board first named in said appointment shall call a meeting of said members immediately after notice of said appointment shall be received by said members, and said board shall meet within six days after said notice, at the time and place designated in said call, and said board shall organize by electing one of their number to be president of said board, and the board shall also appoint a secretary, who shall be a reputable practicing physician of this State, and if not one of the members of said board by appointment he shall be a member of the board by virtue of his appointment of secretary. The said secretary shall hold his office until said board shall appoint another secretary, and he shall be the executive officer of said board of health.

SEC. 3. The board shall take cognizance of the interests of life and health among the inhabitants of the State; shall make or cause to be made sanitary investigations and inquiries respecting causes of disease, especially of epidemics, and the means of prevention; the sources of mortality, and the effect of localities, employments, habits, and circumstances of life on the public health. They shall also, when requested, or when in their opinion the sanitary interests of localities require it, advise with municipal officers with regard to the location, drainage, water supply, heating and ventilation of public buildings and the drainage and sewerage of towns and cities.

SEC. 4. The board shall meet biennially on the second Tuesday of the session of the legislature at Montpelier, and at such other times and places as in the judgment of the board the public health may require, and also whenever the public safety of the people or the stock and domestic animals of the State shall require. The secretary, as executive officer of the board, shall superintend the performance of the work prescribed in this act, and shall perform such other duties as the board shall direct. He shall also respond to the invitations of boards of selectmen of the several towns or the mayor of a city, in case of epidemics, contagious diseases or other

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unusual sickness, by visiting the locality, or in such other way as may be deemed best; he shall render the secretary of state any necessary assistance in preparing for publication the annual registration reports required by law relating to births, deaths and marriages in the State, and he shall make report to the governor on or before the first day of September in each year of the investigations, discoveries, and recommendations of the board, which report shall be printed and distributed as soon as practicable thereafter in the same manner as other public documents of the State.

SEC. 5. The compensation of members of the board shall be five dollars per day and actual expenses while in discharge of their official duties, and the governor and auditor of accounts may allow to the secretary of said board such additional sums for services as secretary, or for services in times of extraordinary peril, as seem to them reasonable, provided the whole expense of the board, including the secretary, for services rendered and all expenses incurred, shall not exceed one thousand five hundred dollars in any year, except in some extraordinary public peril, in which case the governor may order said board to do and perform service for the safety of the State and her people in excess of said sum, but never to exceed the sum of two thousand five hundred dollars in all in any one year.

SEC. 6. This board shall have authority to promulgate and enforce such regulations for the better preservation of the public health in contagious and epidemic diseases as they shall judge necessary; and any person or persons or corporation neglecting or refusing, after having been duly notified in writing, to comply with the requirements of such regulations shall, upon conviction thereof, pay to the treasurer of the State a fine of not less than twenty-five dollars nor more than one hundred dollars, said offense to be prosecuted for before any court of competent jurisdiction in the State.

SEC. 7. This act shall take effect from its passage.

Approved November 23, 1886.

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The law creating the State Board of Health was enacted November 23d, 1886. The Board met, organized and commenced work on the 7th of December, 1886. Hence it has been but a few months in existence. It would be absurd to expect ripe fruit in such a brief period. The appropriation was not such as to allow of entering upon any extensive and original scientific research. The Board has not attempted any brilliant display, but by quiet, careful, painstaking study, it has endeavored to learn the needs of the State, and the best methods of supplying them. It desires to educate the people in sanitary matters, and would be glad to get physicians interested in public, as well as in individual hygiene.

Thirty years ago the legislature established the Registration of Births, Marriages and Deaths in this State, and the Secretary of this Board compiled the first four Reports. That was the commencement of a new era in the history of our State, and marks the beginning of an accumulation of facts in regard to diseases and causes of death in the different parts of the State, which no one can dispute are of very great value. By calling attention to the prevalence of communicable, and therefore preventable, diseases the citizens of this State have been, unconsciously perhaps, but none the less surely, educated in matters of health and sanitation. This is clearly proved by the fact that all of these diseases have constantly and steadily decreased in prevalence during the last few years.

By the establishing a Board of Health, it is hoped, and it may reasonably be expected, that another era has dawned, that another and even more important advance will be made. By devoting its energies more directly to disseminating information, in regard to preventing and restricting disease, the Board hopes that the public health may be improved and sickness and death become more rare.

Heretofore solitary sanitarians have, here and there, raised their voices to proclaim hygienic principles, and urge people to have respect for sanitary rules. Very little heed, however, has been paid to them. The Board has merely advisory power, and has no real authority, except in the actual presence of "contagious and epidemic diseases." Still it hopes to be of very much use by diffusing knowledge of the principles of sanitation, and inciting boards of civil authority to take measures to remove or prevent all causes that may be injurious to the public health. It has been wisely said, by one who has been conversant with the subject for many years, that "the chief duty of State Boards of Health, for years to come, will consist in educating the people in hygiene."

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FIRST MEETING.

In accordance with notice given by letter from A. H. Chesmore, M. D., of Huntington, the members, appointed by the Governor upon the State Board of Health, met at the Van Ness House, in Burlington, on Tuesday, December 7, 1886.

It was found that C. L. Allen, M. D., of Rutland, had received a commission from the Governor, as member of the State Board of Health, for six years, and that A. H. Chesmore, M. D., of Huntington, had received a commission for four years, and also that J. H. Hamilton, M. D., of Richford, had received a commission for two years.

Dr. Allen was chosen President.

After deliberate consideration it was agreed that the Board should not go outside of its own members for a secretary. Finally, Dr. Allen consented to act as secretary, and resigned the office of president.

Whereupon Dr. Chesmore was elected President.

Considerable discussion then followed as to how best to carry out the intention of the act of the legislature creating the Board. The question was considered of having lectures given, in different parts of the State, upon the causes affecting the public health, upon the means and precautions to be taken to avoid infectious and contagious diseases, and upon kindred topics. The object being to educate the people, and induce them to take an interest in these subjects. Then the plan of issuing circulars, to be very generally distributed, was commented upon. It was thought that more people could be reached and more influence exerted by circulars than by lectures, which must be restricted to comparatively few places. Hence the Secretary was directed to prepare circulars to be sent to every town in the State.

The Board then adjourned to meet at such time and place as might, by mutual agreement, be thought best.

CHARLES L. ALLEN,
Secretary.

Burlington, December 7th, 1886.

The first work undertaken by the Secretary was to communicate with and establish friendly relations with Boards of Health in other States. Numerous letters were written, and many valuable documents and reports have from time to time been received and suitably acknowledged.

Then the preparation of Circular No. 1 was commenced, addressed to the selectmen of the different towns in the State, calling their

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attention to the duties imposed upon them by the laws of the State. This circular was completed and distributed in January, 1887.

In the mean time the following letter was received:

HEALTH OFFICE, CITY OF BURLINGTON, VT.,
BURLINGTON, VT., Dec. 17th, 1886.

Dear Doctor:—I send you by express to-night half of the head of a hog which was killed last Tuesday in Jericho, I send it at the request of Mr. H. L. Melaney of Jericho, who is suspicious of the presence of some disease, on account of the presence throughout the whole animal of numerous patches, or tubercles, such as you will see on the cut surface of the head. If within the province of the State Board of Health to do so, he would like an investigation made as to the nature of the trouble. If I can assist you in any way in regard to it I shall be glad to do so.

Very Respectfully,
Your Obedient Servant,
JO H. LINSLEY.

DR. C. L. ALLEN,
Secretary State Board of Health,
Rutland, Vt.

If it had been claimed that anybody's health had been jeopardized, perhaps the case might have been investigated. As it was the package, unopened, was returned to Dr. Linsley, and the following letter sent:

STATE BOARD OF HEALTH,
OFFICE OF SECRETARY,
RUTLAND, VT., December 18, 1886.

Jo H. Linsley, M. D.

DEAR DOCTOR:—Your letter and the package by express came to-day. I do not see how the investigation of a case of this kind can come within the province of the State Board of Health. The Governor has by law power to appoint Cattle Commissioners, and it is their duty, if the duty of anybody, to investigate such cases. Hence I must decline to have anything to do with this case.

I am very much obliged to you for your offer of assistance in this case, and will, if you do not object, consider it as a standing offer of assistance whenever I or the Board may have occasion for your services, always expecting, of course, that you will be paid any reasonable bill.

I return the head to you, supposing that the gentleman who sent the head to you will pay you to examine it.

Very Respectfully,
CHARLES L. ALLEN,
Secretary.

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SECOND MEETING.

After correspondence it was decided that the Board should hold a meeting at Manchester, N. H., at Hotel Windsor, during the session of the Sanitary Convention held under the auspices of the New Hampshire State Board of Health.

Accordingly the Board met to-day, January 25, before the first session of the Sanitary Convention. The principal topic of discussion was the Circular No. 1, upon the "Duties of Selectmen in regard to the preservation of Public Health," prepared by the Secretary.

It was voted that 500 copies be printed, one copy to be sent to the first Selectman of each town in the State; one copy to the clerk of each incorporated village and city, and one copy to each newspaper in the State.

The Board then went to Smyth's Opera House to attend the meeting of the Sanitary Convention. After listening to a very able introductory address by the Hon. James A. Weston, President of the Convention, the Board had the pleasure of hearing an instructive paper upon the Sanitary Needs of Manchester, by Dr. W. W. Wilkins of Manchester. This paper elicited a very animated and prolonged discussion, participated in mainly by prominent citizens of Manchester.

Among the sanitary needs of Manchester, Dr. Wilkins put the need of more room in and about school buildings, that there might be less crowding, more pure air, and more space for out of door exercise and sports; hospital accommodation; change in the methods of street repairing; better attention to ponds in the parks; and last but not least, better system of sewerage.

Dr. S. W. Abbott, Secretary of the State Board of Health of Massachusetts, read a most admirable paper upon "Air Supply in School and other Rooms." He referred to its importance to pupils. As one sixth of the population was in school it was necessary that they should have the essentials of healthy existence. He spoke of the components of the air, and the amount respired. Rules were given for fixing the temperature of rooms, and measuring air space. Illustrations were given of the abuse of health. And a discussion of the use of the thermometer, the air tester, the anemometer, and the hydrometer. He closed by reference to the effect of impure air upon health, urging the need of medical supervision of buildings.

Dr. W. F. Childs of New Hampton, N. H., read an able and very interesting paper upon "Disinfectants," treating the subject in a very pleasing manner. He considered infection as the power of communicating disease, and disinfection as that of destroying or preventing the operation of that power. He claimed that there was no need of disinfection where there was no infection. His lecture was interspersed with witticisms and met with hearty applause.

Brother Noah, a man well known on both sides of the Atlantic,

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read an excellent essay on "Harmonious Development" or Physical Education. "Humanity's welfare is a common interest. In such a cause, catholic in its every aspect, all good men are kin." He then proceeded to develop the system of the venerable De La Salle, to whom the pope, over 200 years ago gave the mission "to banish ignorance, the source of every evil." According to De La Salle the "school room is the drill-ground of christian and civil living." "What is education? To cultivate, to train, to develop, to strengthen and to polish all the physical, intellectual, moral and religious faculties which constitute nature and human dignity in the child; to give to these faculties their perfect integrity; to establish them in the plenitude of their power and their action. Hence, to form man, and to prepare him to serve his country in the various social offices he may be called upon to fill, and thus, in a higher conception, prepare him for eternal life, by elevating his present life. Such is the work, such is the end of education." He desired that there should be harmony between the natural and the supernatural man, between mind and matter, between the physical and the intellectual. Physical culture does not pander to sense, does not foster evil inclinations. On the contrary it seeks to render man, body and soul, as strong, as sound, as independent as possible of external accidents. Pure air is the first element in the development of the physical man. Hence large and commodious play grounds, as well as thoroughly ventilated and lightsome apartments, were proposed by De La Salle in the seventeenth century.

The whole essay was an exceedingly polished and scholarly production and elicited general applause.

Then a very interesting paper was read by Col. T. E. O. Marvin of Portsmouth, President of the Society for the Prevention of Cruelty to Animals, upon "Milk from Diseased Cows." He said the adulteration of milk from healthy cows was punishable by fines as it should be, while no effort is made to punish the wretch who brings the milk of diseased cows into the market for sale. It is easy to determine whether we get good milk or not by visiting the place where the cows are kept, and examining them and their surroundings. He detailed instances of stables in a filthy and unsanitary condition, and the consequent disease of the cows. Cancers, scrofulous sores, consumption, etc., affected cows which sometimes gave large quantities of milk.

In the course of the discussion which followed, the proper food for cows was considered. Some claimed that ensilage was a healthful and economical food for cattle. Others thought that ensilage, or any other matter in process of decaying, was not proper. It is not yet known whether disease germs were produced in silos or not. Until it shall be known it is better to be on the safe side.

Dr. D. M. Currier of Newport read a very scholarly paper on the subject of "Burial vs. Incineration." Since the germ theory of disease has been investigated, he said, the matter of burying the dead had seemed doubly dangerous. In earth burial we were simply storing up a vast magazine of germs to attack the living through the avenues of air and water. Millions of dollars were

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expended to make our cemeteries beautiful and park-like without, but within they were full of rottenness and dead men's bones. People recoil when the subject of cremation is mentioned, but upon sober second thought it must appear different. Progressive ideas are not quickly adopted, but it seemed to him that incineration must sooner or later take the place of a custom of taking care of the dead that was overcrowding the cities, and perhaps paving the way for disastrous consequences.

The next essay was by Dr. J. J. Berry, of Portsmouth. His subject was "How Can the Mortality from Consumption be Reduced?" He said "it is an erroneous impression that consumption is of necessity a hereditary disease. The outcome of scientific investigation shows that three-fourths of the cases originate in the patients themselves, and that only twenty-five per cent occur from hereditary influence. The causes of this disease are numerous. Insufficient oxidization is one of the most frequent, and is a cause that can be easily remedied. Not one person in ten knew how to breathe properly. The chest should be unrestricted, the lungs allowed free expansion. All breathing should be done through the nostrils, never through the mouth. Living on damp land, and the inhalation of foreign particles or dust, are frequent causes of the disease. It is an established fact that consumption can be transmitted through the air from tuberculous animals, and also by the milk of tuberculous cows. Consumption is preeminently a disease of malnutrition. Alcohol has no direct influence upon the disease, except that it tends to lower the vitality of the system. Tobacco has, however, a local effect to irritate the bronchial tubes.

Prof. E. R. Angell, of Derry, read an instructive paper upon "Polluted Drinking Water in New Hampshire." The idea that water can purify itself by running a long distance is all wrong, also that water is purified by freezing. A majority of the wells examined were polluted.

Next a very able paper was read by Dr. G. P. Conn, of Concord, upon the "Disposal of Waste Matters." When men mass themselves together more attention must be paid to the disposal of waste matter. Sewers, properly constructed, are the best means we have at present. But cremation, or destruction by fire, must ultimately prevail.

Mr. E. H. Fellows, director of the gymnasium at Phillips Exeter Academy, read an interesting paper upon "Physical Training in College Preparatory Schools." The advantages of a well developed body should be impressed upon the overworked boys of our public schools and academies. It is not so much strength as health that the college student needs. The State owes it to its citizens and itself not only to provide for mental but for the physical education of its children.

Rev. C. B. Crane, D. D., of Concord, followed by an entertaining dissertation upon the "Pulpit and Sanitary Reform." The clergy are not indifferent to sanitary reform, and will aid so far as their influence will allow. If this work of sanitary reform belongs to life, it belongs to religion. Religion has quite as much to do

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with the body as with the soul and the spirit. In the construction of new churches the architect should be directed that if there is to be any intrenchment it must be in frescoing and stained glass and not in ventilation.

Dr. H. DeW. Carville read an instructive essay upon "Testing the Eyes of School Children at Periodic Intervals." The eyesight of all pupils ought to be tested once a year at least.

All the papers read were followed by more or less discussion. The convention, having held five sessions during the two days, finally adjourned on the evening of January 26th.

Before separating the Board unanimously agreed that the time had been profitably spent and that the knowledge gained was well worth the expense and trouble.

Adjourned to meet at the call of the President.

CHARLES L. ALLEN,
Secretary.

Manchester, N. H., Jan. 26, 1887.

Among the numerous letters received are the following,

BALTIMORE, Feb. 11, 1887.

Secretary of the Vermont State Board of Health.

DEAR SIR :—A patient of mine expects to move to Norwich, Windsor county, Vermont. As he has a tendency to phthisis I should like to trespass on your kindness by asking if you could send me any report of diseases, causes of mortality, and of climate in Norwich or in Windsor county. I should also like to know as to the dryness and humidity of the air and ground, the rainfall and cloudiness, the prevailing winds, the average winter and summer temperature, principal cause of mortality. If the State Board of Health has any reports covering all or a part of the information desired, or if you can direct me to any work already published I shall be greatly obliged to you. Thanking you in advance for your great kindness, I am,

Very Respectfully,
WILLIAM B. CANFIELD.

In answer, the following was sent :

STATE BOARD OF HEALTH,
OFFICE OF SECRETARY, March 3, 1887.

William P. Canfield, M. D., Baltimore, Md.,

DEAR DOCTOR :—Your letter of the 11th of February was forwarded to me from Montpelier, during my absence from the State, or it would have been answered sooner. Our Board of Health was only organized in December last. Of course we have had no opportunity to collect statistics. I know of no publications which contain the information you desire. The Secretary of State has made annual reports of the births, marriages and deaths in the State since 1857. There is a complete set of these reports in the Library of the Museum of Hygiene, in Washington, D. C., corner of 18th and G streets, N. W. Perhaps you can obtain the reports for the last few years by writing to H. A. Huse, State Librarian, Montpelier, Vt. In these reports, about three or four years since, the deaths from consumption were summed up for the preceding

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twenty-five years. I have not the reports in my office, but my recollection is that there were, in the State, such a number of deaths as would correspond to about twenty-five each year in each 10,000 of the population. I remember that Windsor county exceeded every other county in mortality from this disease.

Possibly meteorological records may have been kept at Dartmouth College in Hanover, N. H. If so, they will be about the same as if made in Norwich, Vt., as only the Connecticut river, which is not very wide at that point, separates the two places.

I am sorry that after so long delay my response cannot be more satisfactory.

Very Respectfully,

CHARLES L. ALLEN,

Secretary.

TUNBRIDGE, VT., Feb. 28th, 1887.

DEAR SIR :—Just a line to ask the opinion of the State Board of Health in regard to the danger of contagion from the disinterment and removal of the remains of a person (that have been buried twenty-three years) who died of diphtheria. Yours,

A. C. ADAMS.

To which the following answer was returned :

STATE BOARD OF HEALTH,
OFFICE OF SECRETARY,
RUTLAND, March 10, 1887.

Mr. A. C. Adams:

DEAR SIR :—The danger from contagion, in the case mentioned in your letter of the 28th of February, must be very little, if any at all. It will depend somewhat upon the soil in which the body was buried. Ordinarily the earth must have rendered inert any diphtheritic poison which the system may have contained at death. However, to be perfectly safe it would be well to saturate the ground with some disinfectant, after removing the earth to within a few inches of the remains. Two or three pounds of copperas, (sulphate of iron) dissolved in a pailful of water will be sufficient. The hands of the person touching or taking out the remains should be moistened with carbolized oil.

These are wise precautions in any case, even where there is no risk of specific poison.

Absence from the State has been the cause of delay in answering your letter.

Very Respectfully,

CHARLES L. ALLEN,

Secretary.

The following telegraphic despatch was received from the Governor :

BRANDON, April 8th, 1887.

Dr. C. L. Allen, Rutland.

Don't fail to go to North Bennington to-day to confer with Cattle Commissioner Drew.

EBENEZER J. ORMSBEE.

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STATE BOARD OF HEALTH,
OFFICE OF SECRETARY,
RUTLAND, April 9th, 1887.

Gov. E. J. Ormsbee.

SIR :—I have the honor to report that in compliance with a telegram received from you yesterday, April 8th, I took the first train for North Bennington, and went from there with Mr. L. A. Drew, Cattle Commissioner, to visit a herd of calves belonging to Mr. H. N. Elwell. We found a herd of sixty-eight calves, of which two were sick. Eleven others had died within the last two weeks, none of which had been sick more than twenty-four hours, and some had died within six hours after the first symptom noticed. After careful examination of those living, and post-mortem examination of two, I concluded the disease to be anthrax or "splenic fever." It has prevailed in New Jersey, and I think in New York and Pennsylvania. As it is a communicable disease I gave some advice to Mr. Drew and Mr. Bissell in regard to quarantine and disinfection.

Very Respectfully,
Your Obedient Servant,
CHARLES L. ALLEN,
Secretary.

In connection with this subject the following letter was received:

RUTLAND, May 5th, 1887.

Dr. Allen.

DEAR SIR:—I called at your office to-day, but unfortunately found you had gone to Burlington, at the request of the State Cattle Commissioners, in regard to the stock in Bennington county, and with which I understand you are conversant. As I have been unable to see an affected animal, and the herd has now been slaughtered, I would feel obliged if you would kindly send me a note of your observations, especially those found on post-mortem examination. I am inclined to believe, from what I have learned, that the trouble was anthrax, or at least anthracoid.

Very Respectfully,
R. A. McLEAN, D. V. S.,
Inspector of Bureau of Animal Industry,
Dep't of Agriculture,
Washington, D. C.

To which the subjoined answer was returned :

STATE BOARD OF HEALTH,
OFFICE OF SECRETARY,
RUTLAND, May 6th, 1887.

R. A. McLean, D. V. S., Inspector, &c.

DEAR SIR :—In answer to your note of yesterday, I can state that I visited the herd of calves of Mr. Elwell in Bennington, Vt., and found two calves sick. Both seemed to have very nearly the same symptoms, viz.: loss of appetite, constipation, trembling, disnclination to stir, weakness, difficulty of breathing, occasional iough, discharge of bloody mucus from the nostrils, coarse rales in che chest, no dullness upon percussion, swelling in the lower part

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of the neck over the windpipe. I made a post-mortem examination of one. The blood was dark, thick and almost tarry. The swelling in the neck proved to be an effusion of serum, sanguineous and semigelatinous. There were several other infiltrations of the same kind in various parts of the body, some subcutaneous, some intermuscular. The lungs and pleuræ seemed to be perfectly normal, but the mucus membranes of all the air-passages were dark, purplish, swollen and bathed with bloody mucus. I saw also the lungs of another that had died the night before; they were in the same condition.

I regret that I did not examine the viscera in the abdomen. But when I had got so far it became dark, and it was quite necessary that I should return to Rutland that night.

Perhaps Dr. Page, veterinary surgeon, of Manchester, Vt., who made further investigations the next morning, may be able to give you the appearance of the spleen and other abdominal organs.

I am not very well versed in diseases of cattle, but I considered the disease to be anthrax.

Very Respectfully,
CHARLES L. ALLEN,
Secretary.

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF ANIMAL INDUSTRY,
SALEM, N. Y., 13th May, 1887.

Dr. Charles L. Allen, State Board of Health, Rutland, Vt.

DEAR SIR:—Allow me to acknowledge the receipt of your favor of the 6th inst., and to express my thanks for your attention to my request, and the full report you have given me of Elwell's cattle.

There is no doubt but that the herd was affected with anthrax fever.

Very Respectfully,
R. A. McLEAN, D. V. S.

During the month of April Circular No. 2 was issued, addressed to physicians, asking for certain information which was deemed desirable for the use of the board. This circular is given on page 25 and the answers received are appended.

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THIRD MEETING.

The Board met to-day, at the Van Ness House, Burlington, pursuant to the call of the President. After some conversation in regard to Circulars Nos. 1 and 2, the subject of overcrowding in cemeteries was discussed; also the depth at which bodies should be interred. It was decided to recommend the discontinuance of burial in cemeteries within the limits of cities, or villages, because bodies are not usually buried sufficiently deep to prevent the escape of noxious gases. The disinterment of human remains should be allowed only under stringent regulations by the proper authorities.

Voted, That slaughter houses, compost heaps, and other sources of contamination of the air ought not to be permitted within city or village limits.

It was agreed that this Board comply with the resolutions passed by the National Conference of State Boards of Health, at Toronto, in regard to inter-state notification of infectious and contagious diseases.

There was considerable discussion upon the proper sanitary location, construction and arrangement of school houses. The secretary was directed to issue a circular upon these subjects, to be distributed to town superintendents of schools.

After remarks upon the great neglect of sanitary regulations by the proper authorities, it was

Resolved, That we urgently request the selectmen of every town, and the trustees of every village to comply with the suggestion of the Board in Circular No. 1, to appoint a health officer, who should, by preference, be a medical man.

Dr. C. L. Allen, of Rutland, was appointed a delegate to attend the next annual meeting of the National Conference of State Boards of Health to be held in Washington, D. C., in September next, Dr. J. H. Hamilton of Richford, substitute.

Adjourned to meet at the call of the President.

CHARLES L. ALLEN,
Secretary.

Circular No. 3, entitled "Sanitary School Houses," was completed and issued in July. Many calls for additional copies have been received.

Many letters have been received asking for information, statistics, etc., in regard to mineral springs, deaths by lightning, etc. All of which have been answered as fully as possible.

Complaints have, from time to time, been made to the Board in regard to nuisances in various towns. In all cases the selectmen of the respective towns have been written to, and the causes of complaint have been removed, so far as heard from.

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CIRCULAR NO 1.

CHAPTER 173 OF THE REVISED LAWS.

Preservation of Public Health.

SMALL POX.

SECTION 3919. If a person is infected with the small pox, the selectmen of the town shall immediately provide a place remote from inhabitants, and remove him to such place, unless in the opinion of the attending physician the life of such person would be endangered by the removal; and they shall, by requiring immediate vaccination and otherwise, take measures to prevent the spread of the disease.

SEC. 3920. If a person is infected with the small pox near the line of a town so as to expose the inhabitants of an adjoining town, the selectmen of the adjoining town may exercise the authority and take the precautionary measures prescribed in the preceding section.

SEC. 3921. The selectmen shall provide physicians, nurses and necessaries for such infected person as the nature of the case requires, at the expense of such person, if of sufficient ability to pay the same, otherwise at the expense of the town in which said person has a settlement, if he has a settlement in this state, if not, at the expense of the town in which such person is.

SEC. 3922. If a person, knowing himself to be infected with the small pox, comes within a town, without previously obtaining consent of the selectmen, or if a person knowingly and voluntarily communicates or receives the infection of small pox in a town without the consent and approbation of the selectmen, the person so offending shall be fined not more than two hundred dollars.

SLAUGHTER HOUSES.

SEC. 3923. No person shall carry on the business of butchering in a building without the approbation in writing of the board of civil authority, describing the building and limiting the time during which such person shall carry on such business; and if a person carries on such business without such approbation or after the expiration of the time so limited, he shall forfeit not more than five hundred dollars.

NUISANCES INJURIOUS TO HEALTH.

SEC. 3924. The selectmen shall make such regulations respecting nuisances, sources of filth and causes of sickness within their respective towns as they judge necessary for the public health, and shall destroy, remove or prevent such as may be injurious to the

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public health; and a person violating such regulations shall forfeit not more than one hundred dollars.

SEC. 3925. When such nuisance, source of filth, or cause of sickness is found on private property, the selectmen shall order the owner or occupant thereof, at his own expense to remove the same within twenty-four hours; and if he neglects to do so he shall forfeit not more than one hundred dollars, and the selectmen may cause such nuisance, source of filth or cause of sickness to be removed and the expense shall be paid by the owner or occupant or such other person as caused or permitted the same.

BURIAL OF ANIMALS.

SEC. 3926. If a person puts or causes to be put a dead animal or animal substance into, or upon the bank of, so that it is drawn or washed into, a lake, pond, running stream or spring of water and suffers the same to remain he shall forfeit not more than twenty dollars and not less than five dollars, with costs, to the town in which the offense was committed, to be recovered before a justice.

SEC. 3927. If a person puts or causes to be put on the premises of another or on his own premises, a dead animal or animal substance and suffers it to remain unburied within one hundred rods of a dwelling house or public road, between the months of March and December following, he shall be punished as provided in the preceding section.

SEC. 3928. Grand jurors shall prosecute offenses against the two preceding sections; but prosecutions shall be commenced within three months from the time of the commission of the offense if the respondent remains during that time in the state.

To the Selectmen:—

Selectmen, by virtue of the duties expressly assigned to them by the laws of the State, as above, are really Boards of Health in each town. In incorporated villages and cities, of course, the trustees and alderman have preferred jurisdiction.

Hence the State Board of Health appeals to all selectmen and trustees of villages and aldermen of cities, and local boards of health wherever established in the State, and all health officers, to co-operate in the care of the public health. It is only by combined and extensive action that public health can be maintained. Public health is public wealth. Or as Froude expresses it "the common wealth is the common *health*, the common well-ness," and then adds "no nation can prosper long which attaches to its *wealth* any other meaning." Every board of selectmen, and every board of village trustees, if they have not already done so, should at once appoint some medical man as health officer, to examine all places where there may be any reason to suspect that causes of disease are lurking, and generally to give advice in sanitary matters. Of course the State Board will always be ready to advise, assist or act whenever called upon.

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Disease and death are inevitable. But a very large proportion of the most common diseases are unnecessary because they can be prevented. Yet the individual is powerless, he cannot escape unless by a fortuitous combination of circumstances. Precautions must be taken by whole communities. As a matter of economy alone it will pay to take thorough measures to prevent the spread of all avoidable diseases. The result of disease upon human happiness may be set aside, because the anxieties, the griefs, the anguish, the pains, of the sick and the friends are not matters of calculation. But the pecuniary loss to the community is surprisingly great from preventable disease. Take for instance typhoid fever. For the ten years ending with 1884 there were an average of 134 deaths each year, in this State. This according to ordinary estimates would imply that there were, on an average, about 1,000 cases of sickness from this disease each year. But take only those who ordinarily would be able to labor, that is those between the ages of fifteen and fifty. Among these there were 77 deaths on an average each year, implying 460 cases of disease which recovered. Now it is well known that very few are able to return to work in less than ten weeks. This would make 4,600 wecks labor lost. If the average of wages is $1 per day, the money value of the loss would be $27,600. In this is not included the loss of labor of friends and nurses, nor the necessary expenses attending so much sickness. Nor is any account taken of those who died, who, if they had lived would have been worth to the State at least $500 each on an average. So much wealth has been each year wasted, and worse than wasted, which should have been added to the common wealth of the State. And this is only one of the numerous preventable diseases. Among the more common diseases which are declared to be communicable and dangerous to the public health are Small-pox, Cholera, Scarlet Fever, Measles, Diphtheria, Typhoid Fever, Typhus Fever, Yellow Fever, Spotted Fever, Relapsing Fever, Epidemic Dysentery, Hydrophobia and Glanders. Whenever any of these diseases shall have become developed in any locality, the fact of its existence should be reported to the selectmen, or other proper authority, who should at once take active measures to prevent the spread of the disease. The precautions to be taken vary somewhat according to the disease. In all cases of death from Small-pox, Typhus Fever, Diphtheria, Scarlet Fever or Measles, the proper authority should strictly forbid a public or church funeral.

SMALL POX.

The statute law (Secs. 3919 to 3922 inclusive) provides in a general way the manner in which cases of small-pox shall be cared for, and its spread prevented by "vaccination or otherwise." If, however, the patient is not removed he should be placed in a room farthest removed from the rest of the family, where is to be had the most complete ventilation and isolation. The room should be previously cleared of all curtains, carpets, woolen goods, and all unnecessary furniture. The house should be properly designated by a yellow flag, or some other equally conspicuous and significant

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signal. Communication with the family should be permitted only under close restrictions. All children of the family should be prohibited from attending school, or from mingling with others. As small-pox is most contagious during convalescence, the patient should not be allowed to mingle with the family or meet others until the scabs are entirely off, and then only after a thorough purification by washing and an entire change of clothing. These precautions are to be as thoroughly carried out in very mild cases, and cases of varioloid, as in the most malignant cases.

SCARLET FEVER.

It is well known that scarlet fever is essentially a disease of childhood, and that it is usually more severe in children under 10 years of age, Hence it is very important to protect children under ten years of age from exposure to it. With the exception of vaccination, the same precautions should be enforced as in cases of small-pox, the same scrupulous care as to isolation, ventilation and furniture in the room. If scarlet fever is not as disgusting and repulsive a disease as the small-pox, it is at least as often fatal. As it is also more contagious during convalescence, and the contagion more particularly liable to be carried by clothing and otherwise, communication with those who have been in the room of the patient should be strictly forbidden. Children of the family should not be allowed to attend school. Books from any public library should not be carried into any house where the disease is. These precautions should be continued until the period of desquamation has passed, and the patient, clothing and house have been thoroughly disinfected. This, even in mild cases, will take at least six weeks. In some cases it will be ten weeks before it will be safe for one who has had scarlet fever to mingle freely with others without risk of giving them the disease. Although it is undeniable that small-pox and scarlet fever are transmissible in their earlier stages, yet it is true that mainly the contagious principle resides in the pus, or "matter" and the scab of the one, and the exfoliated cuticle or scarf-skin of the other. Hence the risk of carrying it in clothing and other articles, and imperative necessity of insisting upon thorough disinfection of all articles that have been near the sick one.

MEASLES.

If not as offensive a disease as small-pox, or as fatal as scarlet fever, measles is yet as contagious, and causes a large amount of sickness every year. During the last ten years there have probably been 15,000 cases of measles in this State, causing three times that number of weeks sickness. The contagious principle seems to be in the atmosphere surrounding the patient, so that a person going into the room of one who is sick with this disease is liable to take it. The contagion can also be carried in clothing and other articles. Hence the same precautions, as in scarlet fever, should be taken, in regard to isolation, ventilation and furniture. Also in regard to communication of the family with others, children attending school, books from a public library, etc. But the time need

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not be as long. Usually about three weeks will be enough to cover the period of risk of exposure, if disinfection is thoroughly employed.

DIPHTHERIA.

It is doubtful whether diphtheria can be transmitted through the atmosphere surrounding a patient. But it is certain that the discharges from the throat and nose do possess the power of producing the disease, and it can be conveyed in clothing and other articles. Hence all the precautions necessary to be taken when scarlet fever and measles are present should be rigidly enforced, particularly as to isolation and communication with families in which the disease exists. As it is well known that filth and foul air from whatever source have a great influence to increase the malignancy of diphtheria, care should be taken to have all cellars, sinks, sewers, cesspools, privy-wells, etc., thoroughly clean and efficiently disinfected.

TYPHOID FEVER.

The main source of typhoid fever is the drinking water. Hence whenever a case of this disease occurs it is the duty of the selectmen, or other proper authority, to examine the condition of all public water supplies, and especially that of the family in which the patient is. The sewers and drainage should also be examined. The contagious principle is contained solely in the excrementitious matters coming from the bowels of the patient. If these evacuations are thoroughly disinfected and buried in the ground there can be no risk of the disease spreading. Of course if the patient has discharges while in an unconscious or stupid condition, or if by accident the body linen or the bedclothes should be soiled, these must be immediately changed and disinfected. The excrements must be buried so far from any well, spring or other source of drinking water that there shall be no possibility of their leaching through the soil into the water which may afterwards be used. Typhoid fever is not transmissible through the atmosphere surrounding the patient, or even by actual contact with the body of the patient. Hence isolation is not necessary, and no restrictions need be placed upon intercourse of the family. Unless soiled by the discharges from the bowels it cannot be transmitted into other places by clothing or other articles.

TYPHUS FEVER.

This highly contagious disease is very rare in this State. It originates evidently from crowd poisoning. It is developed whenever even perfectly healthy persons are confined for a considerable length of time in a limited amount of air, as on shipboard, where it is termed "ship fever." Once developed even separate cases are surrounded by a contaminated atmosphere so loaded with the poison that few escape the fever who come within its range. It is not, like the diseases before considered, protective from a second attack; no one is exempt because he has had the disease once. Hence the most rigid isolation must be enforced during the existence of the

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fever. Fortunately, with proper attention to ventilation and bathing, which are often the only treatment necessary, the disease is ordinarily of short duration.

Other communicable diseases that are dangerous to the public health occur so rarely in this State, that it is scarcely necessary to consider them at this time.

SLAUGHTER HOUSES.

It is provided by Sec. 3923 of the Revised Laws that the board of civil authority shall grant approbation in writing to "carry on the business of butchering" for a limited time, in certain places. It is obvious that the intent of this law is that the board of civil authority should make such conditions and restrictions as they may think necessary for the preservation of the public health. No slaughter house should be allowed within the limits of any village or city, the distance of location beyond the limits being determined by the configuration of the land and the direction of prevailing winds. Ordinarily the distance should not be less than one mile, It should be distinctly understood that the keeping and slaughtering of all cattle, sheep and swine, and the preparation and keeping of all meat, fish, birds or other animal food, shall be in a manner best adapted to secure and continue their wholesomeness as food. And that any place, room or building wherein any cattle, sheep or swine have been or are killed or dressed, shall be thoroughly cleansed and purified, and all offal, blood, fat, garbage, refuse and unwholesome and offensive matter shall be removed therefrom at least once in every twenty-four hours, if used continuously, or if only used occasionally, within twenty-four hours after using.

No blood-pit, dung-pit, offal-pit or privy-well should be allowed in any slaughter house.

No pigs or hogs should be kept in the same inclosure with a slaughter house, nor should they be fed, there or elsewhere, upon the offal of slaughtered animals.

NUISANCES.

Selectmen are given power, by Sec. 3924, to "make such regulations respecting nuisances, sources of filth and causes of sickness, within their respective towns, as they judge necessary for the public health." Whatever is dangerous to human life or health, whatever renders soil, air, food, water or other drink unwholesome, and whatever building, erection, or part or cellar thereof, is overcrowded, or not provided with adequate means of ingress and egress, or is not sufficiently supported, ventilated, sewered, drained, cleaned or lighted, are really nuisances. House-refuse, offal, garbage, dead animals, decaying vegetable matter, or organic waste substance of any kind should not be thrown on any street, road, ditch, gutter or other public place within the limits of any village or city. No putrid or decayed animal or vegetable matter should be kept in any house, cellar, or adjoining out-building or grounds for more than twenty-four hours.

No pig pen, stable, privy-vault, cesspool, or reservoir into which any of these, or any water-closet or sink is drained, unless water

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tight, should be permitted to remain where, by any possibility, their drainings may leak through the soil into any well, spring or other source of water used for drinking or culinary purposes.

C. L. ALLEN, M. D., Sec'y,
A. H. CHESMORE, M. D. Pres.,
J. H. HAMILTON, M. D.,
} State Board of Health.

DISINFECTING SOLUTIONS.

Principally suggested by the Committee on Disinfectants of the American Public Health Association :

For the Disinfection of the Discharges from the Patient.

1. *Standard Solution No.* 1.—Dissolve chloride of lime or bleaching powder of the best quality (containing at least twenty-five per cent of available chlorine) in soft water in the proportion of four ounces to the gallon.

2. *Standard Solution No.* 2.—Dissolve corrosive sublimate and permanganate of potash in soft water in the proportion of two drachms of each salt to the gallon.

(NOTE.—1. This solution is highly poisonous. 2. It requires a contact of one hour to be efficient. 3. It destroys lead pipes. 4. It is without odor.)

3. *Standard Solution No.* 3.—To one part of Labarraque's Solution (*liquor sodæ chloratæ.*—U. S. P.,) of hypochlorite of soda add five parts of soft water.

(NOTE.—Competent authority has pronounced this superior to all other disinfectants.)

For the Disinfection of Clothing, Towels, Bedding and other Textile Fabrics.

4. *Standard Solution No.* 4.—Dissolve corrosive sublimate in water in the proportion of four ounces to the gallon, and add one drachm of permanganate of potash to give color to the solution as a precaution against poisoning. One fluid ounce of this solution to the gallon of water is sufficiently strong. Articles should be left in it for two hours. One gallon of standard solution No. 1 may also be mixed with nine gallons of water, and used in the same way. No article should be allowed to leave the infected room until it has either been disinfected or boiled.

(NOTE.—Corrosive sublimate solutions should be kept in wooden or crockery vessels.

For the Disinfection of Water-Closets, Urinals, Sinks and Cess Pools.

5. *Carbolic Acid Solution.*—Mix one pint of carbolic acid with two and a half gallons of water.

Standard solution No. 4 diluted with three parts of water may also be used in the proportion of one gallon (of the solution) to every four (estimated) of the contents of the vault. Standard solution No. 1 would require to be used gallon for gallon of the material to be disinfected. Dry chloride of lime may be sprinkled over

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the contents of a privy, or standard solution No. 2 may be made up by the barrel, and four or five gallons be applied daily during an epidemic.

For Disinfection of the Sick Room after it is Vacated.

Thorough ventilation for several days, and thorough washing of all surfaces with one of the disinfecting solutions, say, one pint of standard solution No. 4 to four gallons of water, or a quarter of a pint of solution of hypochlorite of soda to a gallon of water. The walls and ceiling, if plastered, may be washed with this, and then whitewashed. All dust must be carefully washed (not brushed or swept) away from ledges, cracks, corners and crevices.

Sulphur Fumigation.

To use this effectively, two pounds of sulphur should be burned in a room ten feet square. Every opening in the room, flues, doors, windows, cracks and crevices, must be closed, except the door by which the disinfector is to escape. The sulphur is to be burned in an iron kettle or other vessel set in a tub containing a little water to guard against fire. A little alcohol or kerosene must be poured upon the sulphur, by means of which it may be ignited. Leave the room quickly, for the fumes are highly poisonous when breathed, and close the door tightly. Let the room remain closed twenty-four hours or more. Then air thoroughly for several days.

QUESTIONS CONCERNING TOPOGRAPHY, DISEASES, ETC.

CIRCULAR NO. 2.

Dear Doctor:—The State Board of Health earnestly requests your aid and co-operation in investigating the diseases of this State.

That the causes and nature of those maladies which depend upon locality or season for their prevalence, may be thoroughly understood, it is necessary to take into consideration the character of the location in which they prevail; its mountains, hills, valleys, rocks, trees, rivers, etc.; and the character of current and preceding seasons, as well as the leading characteristics of the diseases themselves, their peculiarities and changes. Thus the influence of external agents and circumstances, in modifying or producing this class of diseases, may be elucidated, and great aid afforded in establishing the hygienic character of each locality.

Every physician knows exactly what is wanted, that is, the topographical characteristics of his own town, and its medical history for a certain time. Of course, being unaccustomed to writing dissertations and essays, few are willing to undertake the labor necessary to write an elaborate paper which shall do justice to the subjects and to their own abilities. If the immense store of knowledge, now latent, buried in the bosoms of physicians, can be brought to light, collated and arranged, what a vast amount of information

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will be obtained; how much light will be thrown on the now obscure causes of disease and death. Let each one furnish such facts as he knows, and the diseases of our State will be more thoroughly understood, and therefore more skillfully treated, and more easily avoided.

To lessen the labor of furnishing the information, the accompanying questions are offered. Full and definite information upon each point, from direct knowledge, distinct recollection and reliable records, is desirable, but scarcely to be expected. Therefore, approximative answers, if indicated as such, will be very acceptable when perfect accuracy cannot be obtained. Will you, as your contribution to this great work, append answers to these questions, or to as many of them as you readily can? By comparing these answers and noting what peculiarities are constantly or frequently found to exist in any given disorder, in certain kinds of locality or season, many now obscure and perplexing points may be rendered plain.

When these questions are answered, either by filling the blank spaces or by writing more fully facts and opinions, will you be kind enough to mail them to the "Secretary of the State Board of Health, Rutland, Vt?"

If several epidemics have prevailed within your recollection, will you be kind enough to answer the questions from 16 to 32 inclusive, in regard to each, upon a separate sheet?

As it is desirable to get these facts from the entire State, and as some towns have no resident physician, will the physicians of the neighboring town give the desired information?

In all cases due credit will be given for information received.

A. H. CHESMORE, M. D., PRESIDENT, Huntington,
J. H. HAMILTON, M. D., Richford,
C. L. ALLEN, M. D., SECRETARY, Rutland,
State Board of Health.

1. Is your locality mountainous, hilly or low land?
2. What kinds of rocks prevail?
3. Are natural springs numerous or scarce?
4. What is the character of the water of the springs and wells?
5. Are the streams of water rapid or sluggish?
6. Is the soil chiefly composed of clay, sand, gravel or loam?
7. Are there any ponds or stagnant water?
8. Is there much of the original forest remaining?
9. What are the most common forest trees?
10. Is the open land mainly cultivated or devoted to grazing?
11. What manufactories, and how many hands employed?
12. What quarries or mines are open, and how extensively worked?
13. Has any record of weather been kept and can it be obtained?
14. What other circumstances exist which may have an influence on the public health?

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15. How many slaughter-houses are in town, and how far are they from the public highway or village ?
16. What are the prevailing diseases ?
17. What disease has been epidemic within your recollection ?
18. When (in what year and month) did it begin ?
19. When (year and month) did it close ?
20. Was it most severe at the commencement or close ?
21. Did it attack most frequently children, adults or the aged, males or females ?
22. What proportion of the community was affected ?
23. Was it confined to a limited locality, or was it wide-spread ?
24. What proportion of the cases were fatal ?
25. Had the disease any peculiarities ; that is, did it correspond in symptoms, etc., with the descriptions given in the text-books ?
26. Which of the ordinary symptoms were wanting ?
27. What uncommon symptoms were observed ?
28. What variation in the relative intensity or duration of the common symptoms was noticed ?
29. If any post-mortem examinations were made, what pathological changes were observed ?
30. What was the character of the season during the prevalence of the epidemic, as to heat and cold, dryness and moisture, rain, snow, etc.
31. What was the character of the preceding season ?
32. What other circumstances or facts connected with this epidemic are worthy of notice ?
33. Are sporadic cases occurring occasionally when no epidemic is prevailing ?
34. Have you observed any notable cases in which contagion was pretty certainly communicated by means of clothing or other fomites ? Give particulars.
35. Have you known of cases in which contagion seemed to retain vitality long in clothing or rooms ?
36. Have you known of disease being spread by public funerals ?
37. What has been your observation regarding the spreading of contagious diseases through schools ?
38. What effects have you noticed caused by pollution of water by cess-pools, sink-drains, privy-vaults, barn yards or other means ?
39. What was the source of water supply in any family in which typhoid fever occurred ?
40. If from a well, what was its situation ?
41. If from a river, what was its possibility of receiving drainage from a village or houses above ?
42. What, in your opinion, are the more frequent causes of phthisis ? Heredity ? Imperfect ventilation ? Dampness ? Unsanitary conditions ? Infection ? Exposure ? Mental depression ?
43. What are the most common faults in the school houses in your town ? Ventilation ? Heating ? Lighting ? Other unsanitary conditions ?
44. Have you known cases of serious disease from unsanitary conditions in school houses, or from overwork in schools ?

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J. D. Brewster, M. D., *Windsor.*

1. Low. Running back, hilly.
2. Slate.
3. Yes.
4. Contains much lime.
5. Rapid.
6. Clay, and sandy in places.
7. Two ponds.
8. No.
9. Maple, spruce and birch.
10. Cultivated.
11. Cotton mill; 70 hands. Machine shop; 35. Shoe shop; 87.
12. No.
13. Yes; of Mr. Wm. Skinner.
14. Nothing that I could mention.
15. Two; about one mile from the village, near the highway.
16. Catarrhal trouble, if anything; I can't say as any prevailing disease.
17. Slight epidemic of diphtheria.
18. September, 1886.
20. About same all the time.
21. Children; no preference in sex.
22. Very small.
23. In places over the town.
24. Not but four deaths and some 30 or 40 cases.
25. Yes.
28. The cases were usually mild. The severe cases were usually nasal. Much fetor of breath and swelling of lymphatics of neck.
29. None made.
30. More wet than usual and snow early.
31. I can't now well tell.
32. Nothing.
33. Very seldom.
34. I remember none now.
35. Have known scarlet fever germs to retain vitality for some weeks and infect a well child that occupied the room.
36. No; we do not allow them.
37. The schools here were closed at once and not opened through the winter, until the disease was entirely eradicated. I think one school was the means of exposing several persons at first, as there were seven or eight in that school who had the disease.
38. The water used by our village comes from springs on a hill above the town.
39. We rarely have typhoid fever, late years. One farm had several cases, where the cause was bad drainage. Water supply all right.
42. The cases I have seen were heredity and exposure.
43. We have one of the finest equipped school-houses in the State; all modern conveniences for ventilation, heating and lighting.
44. I think there is a tendency to overwork in our public

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schools, which affects girls particularly, at the age of 14 to 16. In our place I look upon this as our only fault in school management.

E. R. CAMPBELL, M. D., *Bellows Falls.*

1. Hilly; in some places mountainous.
2. Mostly azoic; principal veins being gneiss, calciferous mica schist, clay-slate and talcose schist. Fourth geological section of Vermont commences here.
3. Numerous.
4. Usually soft.
5. Rapid.
6. Clay and gravel with some loam.
7. No stagnant water; Minard's pond, about 1½ miles, supplies the village with water. This pond is fed by natural springs, and is about 180 feet above the level of the village square.
8. No.
9. Some pine; formerly a much larger amount than now. Maple, oak and birch most common now.
10. Mainly cultivated.
11. Several large paper manufactories. Vermont Farm Machine Company, Derby & Ball, largest scythe-snath factory in world, iron foundry and smaller industries, employing nearly 1000 operatives.
12. No quarries, except two or three for "building stone," and no mines.
13. I think one can be obtained by addressing Elias Olcott, Esq., Bellows Falls, Vt.
14. Most of the village has been sewered within two or three years.
15. None within one mile of village.
16. Catarrhal troubles.
17. Diphtheria.
18. In the winters of 1882–3 and 1883–4.
19. Don't remember.
20. I noticed no difference.
21. Children, of both sexes.
22. Perhaps two or three per cent.
23. Comparatively limited locality.
24. Small per cent.
25. No.
28. None.
29. I made no post mortem examination of any of these cases.
30. The epidemics referred to occurred in cold weather.
31. Don't remember.
32. In one locality, about one mile from this village, and where the drainage was rather poor and a slaughter house near, the most cases in proportion to population occurred.
33. Yes.
34. No.
35. No.
36. No.

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37. Think that measles, scarlet fever and mumps are easily spread through the agency of schools; diphtheria much less easily.
38. Think them very frequent causes of disease.
39. We have but little typhoid fever in Bellows Falls, the common source of water being Minard's pond.
42. Heredity and one or more of the other mentioned causes combined.
43. School houses in village appear in good sanitary condition.
44. Think that nervous troubles, especially among girls, are brought on by overwork in school.

C. H. CARPENTER, M. D., *Fair Haven.*

1. Hilly.
2. Slate.
3. Numerous.
4. Soft water.
5. Rapid.
6. Sand.
7. Not any.
8. Not much.
9. Pine, soft maple, walnut, ash, oak, butternut, poplar, elm.
10. The largest part to grazing.
11. Slate and marble; from 300 to 500 hands employed.
12. Slate, and worked very extensively.
13. Not that I know of.
14. The sudden changes that we are subject to in this climate.
15. One; one hundred rods from highway and nearly one mile from village.
16. Malaria, rheumatism, bilious troubles, etc., etc.
17. Typhoid fever and scarlet fever. Scarlet fever commenced January, 1886, and closed March, 1887; most severe at commencement; fatal cases, 10 per cent; it was widespread.
18. Typhoid commenced August, 1872.
19. March, 1873.
20. At close.
21. Adults; more males than females.
22. Five per cent.
23. Widespread.
24. Twenty per cent.
25. Had no peculiarities in particular.
30. With the scarlet fever we had a good deal of rain and snow; very cold winter.
31. The preceding season was dry and hot.
33. They are.
34. Mrs. A. had two little girls sick and die with scarlet fever. Six months after Mrs. B. took her little girl there visiting. While there she played with some of the former girls' playthings. In two weeks after Mrs. B.'s little girl came down with scarlet fever and had it very hard.
35. I have.
36. Not any in this locality.

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39. Mostly from wells.
40. Near the dwellings.
42. Hereditary and unsanitary conditions.
43. Ventilation. Heating.
44. I have.

R. T. JOHNSON, M. D., *West Concord.*

1. Hilly; lowland on river.
2. Granite and limestone.
3. Numerous.
4. Saturated with lime.
5. Quite rapid.
6. Clay, gravel and loam.
7. Three ponds.
8. About one-third.
9. Maple, birch, beech, elm, spruce, hemlock and fir.
10. About equal.
11. Mostly lumber; about 500 hands.
12. Not any.
13. No.
14. Nothing in particular.
15. Two; quarter of a mile from village, 40 rods from road.
16. A little of everything.
17. Have had no epidemic in the last ten years.
31. More pneumonia than anything else.
32. All sporadic cases.
33. Yes.
34. Nothing particular.
35. No.
36. No.
37. Have had none in town.
38. Most of them are faulty.
38. Spring water is used almost entirely in this town.
42. Heredity, unsanitary conditions and mental depression.
43. Ventilation.
44. No.

E. K. BAXTER, M. D., *Sharon.*

1. Mountainous and hilly.
2. Limestone.
3. Numerous.
4. Rather hard.
5. Rapid.
6. Various; no one kind predominating.
7. A few ponds, but no stagnant water.
8. Very little, or perhaps I should say, not very much.
9. Maple, spruce and hemlock.
10. About equally divided between both.
11. None.
12. None.
13. None.

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14. None in particular.
15. None.
16. Colds, coughs and lung affections.
17. None, if you except influenza.
34. Have known typhoid fever communicated by means of clothing.
35. Have not.
36. No.
37. Have known measles go through schools to the extent of breaking them up.

This town is fully an average one as regards the public health. Have lived here 35 years and have never known any special or aggravated form of disease to exist in that time.

H. A. WATSON, M. D., *White River Junction.*

1. Hilly.
2. Inclined to be slatey.
3. Fair average.
4. Hard.
5. Rivers, sluggish; brooks, rapid.
6. Loam.
7. Not to my knowledge.
8. No.
9. Pine, and maple, birch, beech, etc.
10. Cultivated.
11. Pulp, at Olcott Falls, 35 hands or that vicinity; forks, shovels, etc.; woolen mill just built, intend to employ 125 hands in due season; about 10 hands in fork factory, all at Hartford. Railroading is the principal employment at this village (White River Junction). Wollens and rag cloth are manufactured at Quechee village Don't know number of hands. All these villages are in this town, Hartford.
12. None.
13. None has been kept to my knowledge.
15. Three or four; generally within stone's throw.
16. Cancerous and consumptive of chronic forms; of the general diseases same as in other localities, one form no more than another, although past autumn and winter whooping cough.
17. Typhoid fever, scarletina, whooping cough, etc.
18. Fall of 1877 or 1878.
19. Same year and spring of the next.
20. Don't know, as I was in practice in southern part of New Hampshire.
21. Don't know, but think children.
22. Don't know; large proportion.
23. Widespread, I think, as I had a good deal in my vicinity at the time.
24. In my practice at the time mentioned one in seven.
25. Not that I remember of.
30. Hot and dry.
31. Don't remember, but think dry.

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33. Yes.
35. Yes.
36. Yes.
37. My observation has been that contagious diseases have been spread much more through schools than any other way. The epidemic of whooping cough the past year was spread in that way.
38. Have noticed they have been a fruitful cause of disease.
39. Wells, mostly.
40. Generally near vaults and sink drains.
42. Heredity, infection and exposure.
43. Heating.
44. Yes, from overwork in schools.

W. H. H. VARNEY, M. D., *East Charlotte.*

1. Hilly.
2. Limestone.
4. Hard.
5. Medium.
6. Clay and loam.
7. None, or very little.
8. No.
9. Maple, beech, hemlock and pine.
10. About equal.
11. None.
12. None.
13. I know of none.
15. I know of none.
16. Throat and lungs.
17. Diphtheria and scarlet fever.
18. December.
19. April.
20. Commencement.
21. Children.
23. Limited.
24. About one-fifth.
25. None.
30. Cold; moist; snow.
31. I don't recollect.
33. Yes.
34. I know of one case: a family attending a funeral at St. Albans of a child who died of scarlet fever, brought the disease to their children, no others occurring in town.
35. No.
36. No.
37. Very rarely, if ever.

H. A. CUTTING, M. D., *Lunenburgh.*

1. Hilly.
2. Talcose schist.

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3. Numerous.
4. Soft and good.
5. Rapid.
6. Loam.
7. None.
8. About one-eighth.
9. Spruce and hemlock.
10. Divided.
11. Lumber; perhaps 50 men.
12. None.
13. Yes; for 39 years, by myself, and can be obtainable; also, records of ozone, deaths, etc., for some years.
14. Elevation, etc.
15. One; half a mile.
16. No special diseases.
17. I can hardly say any has.
33. Occasionally.
34. Yes; in other towns.
35. Yes; in other towns.
37. Diseases of childhood have been so spread.
39. Water is from springs usually, and good.
42. Contagion or infection.
43. Ventilation.
44. Not in this town.

S. E. RANNEY, M. D., *North Bennington.*

1. Combining all.
2. Lime, mostly; some slate, a little marble, iron.
3. About middling.
4. Impregnated with lime and iron.
5. Rapid.
6. About equally divided.
7. Not of any size.
8. Except on the mountain.
9. Maple, birch, beech, spruce, on the mountain.
10. Both.
11. Stereoscopes, boxes, yarn; estimated for North Bennington, 75 hands.
13. None.
13. Not that I know of.
14. Don't know.
15. None now.
16. Very little disease here of any kind except from atmospheric influence in winter and spring from variation of conditions, mostly inflammatory.
17. Typhoid fever, diphtheria; ten years ago.
18. Thirty years ago in November.
19. Can't tell; went into nearly every house, until material was exhausted; lasted several months.
20. At its commencement.
21. Adults more than the young; males and females alike.

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22. All through a radius of three or four miles.
23. Widespread.
24. Should guess one in 12.
25. Yes.
26. Don't remember,
27. Don't remember.
28. Great variation.
29. None made.
30. Cold weather.
31. Forget.
32. Nothing.
33. Yes.
34. Think the fever contagious, and a second attack has never to my knowledge happened.
35. No.
36. No, not one.
37. No denying but what specific contagions here have spread rapidly through schools.
38. Have no positive evidence of disease being propagated in such ways, but there is some guess work this way by those wanting to make out a case.
39. Wells for drinking purposes and cisterns for other.
40. Wells deep and no chance for pollution perceptible.
42. Heredity mainly.
43. Want of ventilation and overheating; too many children in the room.
44. No; I have been town superintendent for six years, and observed carefully the sanitary conditions; have never been able to trace distinctly the origin of disease to any extent, from unsanitary conditions. It is impossible to make out clear cases of *causes*.

C. C. PERRY, M. D., *Bethel.*

1. Hilly.
2. Granite, lime and lead; soapstone, but not sufficient to work.
3. Numerous.
4. Excellent. On one side of the stream it is hard and contains lime; on the other side it is soft.
5. Quite rapid in this part of the town, but sluggish in the east part.
6. Chiefly loam.
7. No ponds or stagnant water, except that caused by mill-dams.
8. About one-half.
9. Maple, birch, beech, oak, basswood, spruce, hemlock, a little pine, some ash, cherry and butternut.
10. About one-third cultivated.
11. Chair shop; only a few hands are employed. Tannery; supposed to tan as much leather as any in the State.
12. Granite quarries have been open for many years but not extensively worked, but arrangements are being made for the employment of fifty hands this season, and the intention is of building a shop and putting in machinery for polishing.

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13. W. R. Adams has kept the records for some years, and they can be obtained of him for a reasonable compensation.
15. Two; one mile from village; only a few rods from the public highway.
16. Pneumonia, bronchitis, pleurisy, laryngitis, phthisis, dysentery, typhoid fever, diarrhœa, etc.
17. No epidemic within my recollection, but we had an endemic of diphtheria in the east village in 1877.
18. March, 1877.
19. September, 1877.
20. At commencement.
21. Mostly children; none older than 24 years.
22. Forty had it; one-third of the community.
23. Limited to one school district, with the exception of two.
24. Sixteen fatal cases.
25. I cannot answer the next eight questions, as the physicians who treated them are all dead, and no record was kept that I know of.
33. Yes, every year; generally in the spring or early summer.
34. Two cases. No. 1 was contracted by going into the woods, where some clothes were buried three years before that were worn by a patient sick with the malignant form of diphtheria. It was a moist day. No. 2 was contracted by taking clothes from the sick room, second day of sickness—diphtheria.
35. No. 1 strongly indicates virulence three years after its origin, thus confirming in a measure Mackenzie's case of three years' standing.
36. The endemic just related originated by a public funeral. A young lady died of diphtheria in Lebanon, N. H., and her remains brought to her home in the east village, as stated, and a public funeral held. Time of incubation, three days.
37. Nothing.
39. Wells.
40. Low ground, not far from the privy.
42. I think corsets in the female, and in the male, exposure. No cases due to heredity.
43. I think ventilation.
44. No.

FERD. E. CHAFFEE, M. D., *South Strafford.*

1. Hilly.
2. Granite and quartz.
3. Numerous.
4. Soft water from springs; hard from wells.
5. The river is sluggish for about four miles; the tributaries rapid.
6. Much clay soil.
7. One pond; but little stagnant water.
8. Quite a part.
9. Hemlock, fir, maple, beech, birch, ash, cherry, basswood.
10. Largely cultivated.

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11. Not much manufacturing.
12. Copper mine and copperas; not much worked.
13. I think not.
15. One; very near the main highway.
16. Typhoid fever, pneumonia, bronchitis, phthisis.
17. Typhoid fever.
18. August, 1884.
19. October, 1884.
20. Close.
21. Children.
22. One in seventy-five.
23. Widespread.
24. Five per cent.
25. Nearly; nearly one-half were complicated with phlebitis.
26. None.
27. None.
28. One case run sixty-six days before the fever subsided.
29. None made.
30. Hot and rainy.
31. Cannot tell.
32. None.
33. Yes.
34. Cannot say.
35. No.
36. Not certainly.
37. Have seen but little of it.
38. None.
39. Either wells or springs; mainly springs.
41. Not from river.
42. Exposure and irregular habits, and heredity.
43. Ventilation and heating.
44. None from overwork, but some from unsanitary conditions.

T. E. WAKEFIELD, M. D., *Fair Haven.*

1. Plain, surrounded by hills.
2. Slate.
3. Scarce.
4. Clear and somewhat hard. The village is supplied by water from Inman pond, situated three miles from the village and 200 feet above it. The pond covers an area of 200 acres and has its source from natural springs.
5. Rapid.
6. Sand.
7. No.
8. No.
9. Originally pine; maple, elm and pine.
10. Cultivated.
11. Slate mills, employing about 350 hands; shirt factory, employing about 100 females; marble mills, 100 hands.
12. Slate quarries, employing about 150 hands.
13. No.

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14. The village has no sewers.
15. One at upper end of village, one-half mile from center.
16. Bronchial troubles.
17. Scarlet and typhoid fevers.
18. Typhoid in July 1861; scarlet, June 1886.
19. Scarlet in August, 1886.
20. Commencement.
21. Children.
22. About two per cent.
23. Limited to Hydeville.
24. About 30 per cent.
25. Typical cases.
30. Moist and warm.
31. Cool.
33. Yes.
34. Yes. We traced the source of diphtheria in a family where five children contracted the disease to decomposed water and vegetables in cellar of dwelling.
35. One case of a little girl who contracted measles after wearing the dress of a girl who died six months previous with measles.
37. Whooping cough prevailed this past winter among the scholars.
38. Seven years ago I traced the source of typhoid fever in which seven persons in one family had contracted it, to a well in a barn-yard.
39. Wells.
42. Heredity.
43. Unsanitary condition.
44. No.

J. H. JACKSON, A. M., M. D., *Barre.*

1. Mountainous.
2. Granite.
3. Numerous.
4. Hard.
5. Rapid.
6. Loam.
7. No.
8. Sugar orchards only.
9. Maple.
10. Both.
11. Forks, woolen goods and monuments; one thousand men are employed.
12. Granite quarries.
13. Not to my knowledge.
14. Imperfect drainage.
15. Three; half a mile.
16. Pulmonary and zymotic.
34. No.
35. No.
36. No.

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37. Have not known any.
38. Most cases of typhoid have been traced to these causes.
39. Wells.
40. From 10 to 30 feet from privy.
42. Heredity first; malnutrition next.
43. All.
44. Yes.

J. J. TOBIAS, M. D., *Brandon.*

1. In the immediate vicinity, mixed; the surrounding country mountainous.
2. Carbonate lime and lime.
3. Not numerous.
4. Alkaline; mostly lime.
5. Rapid.
6. Loam and gravel.
7. Some ponds.
8. Considerable on mountain ranges within ten miles of Brandon village.
9. Beech, birch and maple, and on the mountain ranges spruce, hemlock and white pine, and cedar on the lowlands.
10. Mainly cultivated.
11. Novelty works, making spools, pill boxes, wood turning of all kinds. About 70 men are employed by Newton & Thompson Manufacturing Company. Mop factory, employing 10 or 12 men.
12. Bardillo marble quarry, Brandon Italian marble quarry, Corona Marble Company, Hack marble quarry, Thayer & Symonds quarry; all working to their full capacity except the latter.
13. No record to my knowledge has been kept.
15. Three; one three-fourths of a mile from village, one one-half mile; both near highway.
16. Bilious fever, pneumonia, catarrh, pharyngitis.
17. Diphtheria, scarlatina, measles.
18. There was an epidemic of diphtheria broke out at Leicester Junction, in the town of Leicester, six miles from Brandon, in the fore part of March, 1880.
20. Was most severe at commencement.
21. Mostly attacked children; no case occurred in any person over 25 years of age.
22. Don't know.
23. Confined to an area of three-fourths of a mile.
24. About 60 per cent.
25. Corresponded with the worst forms described in text books.
26. The only peculiarity I recall now was the reappearance of the membrane and the complication of croup.
29. None made.
30. What would be called an open winter.
31. If I remember, it was quite dry.
32. The drinking water was very strongly impregnated with lime, and most of the inhabitants are or were employed in lime kilns; also the hamlet is on low ground and most of the drinking water comes from malarial swamps in the vicinity.

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33. Yes.
34. I have.
35. I have.
36. Don't recall any cases.
37. Have noticed the spread of scarlatina.
38. Typhoid fever and diphtheria. Since the introduction of lake water by a system of aqueducts, typhoid fever has been very scarce, and limited to cases directly traceable to bad drainage and contaminated drinking water.
39. In one case the well was situate under the house with an old fashioned privy within ten feet.
42. Heredity and imperfect ventilation.
43. Ventilation.
44. Troubles from bad ventilation.

J. P. NEWTON, M. D., *Benson.*

1. Hilly.
2. Limestone, largely.
3. Numerous.
4. Mostly hard; containing much lime.
5. Mostly rapid.
6. Clay, chiefly.
7. Yes; along the lake.
8. No.
9. Maple and hemlock.
10. Mainly cultivated.
11. Carriage and spoke; employing a dozen hands.
12. None.
13. No record kept.
15. None.
16. Scarlatina, typhoid fever and phthisis.
17. Typhoid fever.
18. September, 1875.
19. December, 1875.
20. At commencement.
21. Children and middle-aged adults.
22. Ten per cent.
23. To limited locality.
25. Typical cases.
30. Dry season.
31. Have no data to tell.
33. Yes.
34. Think I have; but it is difficult to recall particulars.
35. Think I have.
36. Have not.
37. That when a contagious disease gets into a school it is apt to spread and break it up.
38. Typhoid-malarial fever.
39. Filthy well.
42. Unsanitary conditions.
43. Heating.
44. I have.

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C. W. PECK, M. D., *Prandon.*

1. Both.
2. Lime and marble.
3. Scarce.
4. Nothing unnatural save the famous frozen well.
5. Mountain streams are rapid and the creek is rather sluggish.
6. Sand usually; some clay in spots.
7. Some few ponds, but very little stagnant water.
8. Very little.
9. Hard wood on the high ground and cedar and pine on the low.
10. The tillable land is usually cultivated.
11. Newton & Thompson & Co. They employ about a hundred hands, I should think.
12. Four quarries; employ perhaps 30 men each.
13. I think a man by the name of McKennie on High street did keep a record of the temperature during the winter, and it was, if I remember correctly, published in the Brandon Union.
14. None that I call to mind.
15. Two; both about half a mile from the village; one near the road.
16. I don't know of any.
17. We had a slight epidemic of bronchitis, six or seven years ago.
18. It was in the months of February and March.
19. The same, and it was light.
20. About the same, and seemed to prevail in the region of Lake Dunmore, when the ice was breaking up in the spring.
21. All classes, taking every member of a family.
22. Nearly all in that particular locality.
23. Limited to the southern shore of Lake Dunmore, with a strong north wind blowing across a body of ice.
24. I don't know; 1 succeeded in curing all of mine.
25. It was acute bronchitis, according to the books.
26. None.
27. None.
28. None. It was only the great number of cases involved at a time that attracted my attention, and I thought it due to a cold north wind charged with moisture.
29. There were none.
30. Cold and damp.
31. Normal.
32. None.
33. Yes.
34. None; it is not a contagious disease in that sense.
35. No.
36. Don't call to mind any.
37. I have observed those things from time to time, with such diseases as whooping cough, measles, etc.
38. None; but we have had a peculiar condition of the water in Hitchcock's pond, that we drink. It is too long a story to write,

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and will try and think and tell you the next time I see you, and describe the little animal in the water, as he looks under a microscope.

39. Hitchcock's pond as a rule, and in the village

40. I have not seen any evidence of typhoid fever from bad water.

41. None.

42. Exposure, by far.

43. Ventilation.

44. Have seen several cases of severe colds from want of ventilation, in my judgment.

D. FOSBURGH, M. D., *West Rutland.*

1. All three.

2. Marble, limestone and some kind of slate; I presume, talcose slate.

3. Quite numerous.

4. Most of the springs are soft and some of the wells are soft, but the majority are hard.

5. The mountain streams are rapid, but streams through the intervales are rather sluggish.

6. The uplands are gravelly; the intervales are loam.

7. No.

8. Not very much.

9. Mostly hard wood of the various kinds.

10. It is in about equal proportion.

11. Marble; I should judge employ about 1,000 hands by the different marble companies.

12. Sheldon & Sons, Gilson & Woodfin, Vermont Marble Co., Dorset Marble Co., Valido Marble Co., Esperanza Marble Co., True Blue Marble Co.; all marble quarries and worked extensively.

13. Not to my knowledge.

14. I know of none.

15. One; not used very much; about one mile from the village.

16. I don't know as there is any one disease that prevails much more than others. Possibly we may have more remittents than any others.

17. None.

33. Yes; diphtheria and scarlet fever.

34. About three years ago a lady living in one of the Western States visited here, and before leaving home she had attended cases of scarlet fever. She visited two families in this town, one in Pittsford and one in Clarendon, and in each of those families that she visited the children had scarlet fever, in the usual time after her visits.

35. I don't remember of any.

36. No.

37. We have had none that spread much in our schools here.

38. I haven't noticed any.

39. I haven't seen a genuine case of typhoid fever here in twelve years that I have been here.

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42. In my practice, heredity has been the most frequent cause.
43. I think that the most common faults are ventilation and lighting.
44. A few cases; probably from an unsanitary condition and overwork together.

H. B. KENYON, M. D., *Townshend.*

1. Mountainous.
2. Granite; streak of limestone running through east part of Townshend about a mile wide, running from Athens through the town in a N. W. and S. E. direction.
3. Numerous.
4. Springs are mostly pure, soft water, several chalybeate, two near Townshend village; one in Brookline, heavily loaded with sulph. iron and other mineral salts.
5. Rapid.
6. Clay beds, covered with loam.
7. Several.
8. Very little.
9. Sugar maple, beech, hemlock, poplar, white birch and yellow birch, black and yellow oak, basswood, elm, cherry, in order of abundance mentioned.
10. Devoted to grazing.
11. One steam saw-mill with five hands; one saw-mill and chair factory with four hands.
12. One soapstone quarry; but not worked.
13. I have in my diary a brief record of the weather for 10 years, the time I have lived in Vermont.
15. No slaughter-house in town.
16. Really none.
17. None; measles prevalent in 1883, and more or less of scarlet fever every year.
28. A larger number of cases of scarlet fever were followed by congestion of kidneys last fall and winter than I ever knew before. In my own practice I attended 11 cases of scarlet fever; of these six were followed by kidney complications; one had uremic convulsions for 24 hours; all recovered.
33. Scarlet fever.
35. A family in Brookline had scarlet fever; five years after a garment which had been worn five years before by a sick child of this family was given to a girl in a poor family in which there were six children. Within two weeks after the garment was carried there, the little girl who wore it came down with scarlet fever; I attended her. All six of the children in turn had the fever. There were no other cases within my practice at the time.
38. None.
39. Have had but one case of typhoid fever in my practice in Townshend the past ten years.
42. Heredity. I have not had a case in Townshend that I did not account for in this way.
43. Lighting and heating.
44. No.

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B. E. LENGFELD, M. D., *Isle La Motte.*

1. Mainly low land.
2. Lime.
3. Only one in town to my knowledge.
4. Hard.
5. Not any streams or rivers.
6. Upland sand and gravel; lowland clay and loam.
7. But few; but a marsh divides the island.
8. No.
9. Now standing—maple.
10. Cultivated.
11. Not any.
12. Gray and blue marble; about 75, or from 50 to 100.
13. No; but can safely say eleven months winter and one month in fall.
14. Long cold winters; dampness in atmosphere in summer; strong winds in spring and fall, off the lake.
15. Not any.
16. Typhoid fever, diphtheria, pneumonia, consumption, etc.
17. Pneumonia, typhoid fever, diphtheria, scarlet fever, measles
18. Do not remember the exact dates.
20. Commencement.
21. No class exempt.
22. One in 20. (I mean when typhoid was epidemic.)
23. Widespread. It commenced near a marsh and gradually spread in every direction.
24. One in 20.
25. Nothing peculiar in the symptoms.
26. No.
27. Not any.
28. But little variation in any of the cases.
29. No post-mortems made.
30. Warm and dry. I am now speaking of typhoid.
31. Don't remember.
33. Yes.
34. No.
35. Yes; diphtheria.
36. No.
37. A very prolific source.
38. Not any; only from marshes.
39. Wells, mainly; only a small portion using water from the lake.
42. Heredity, dampness and exposure.
43. School houses in the town are all in fair condition in every respect.
44. No; not in this town.

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A. B. SOMERS, M. D., *Jericho.*

1. Hilly.
2. Talcose slate and limestone..
3. Numerous.
5. Rapid.
6. Sandy loam.
7. None.
8. But little.
9. Maple, spruce, hemlock, birch, beech, ash.
10. Both.
11. None.
12. None.
13. None.
15. None.
16. Pulmonary.
17. Measles and scarlet fever.
18. Measles in 1880.
19. 1881.
22. Nearly all that had not previously had the disease.
23. Widespread, lasting 18 months.
24. Very few; one from convulsions, another from blood poisoning.
33. No.
35. A single case of scarlet fever in a house where an older child had died two years previously.
36. No.
37. None only measles.
38. Cases of continued fevers, especially in dry seasons, when water was low. Saw a very malignant form of diphtheria caused by living over a wet cellar; five children affected. The disease promptly arrested by ventilating the cellar.
39. Wells.
40. Where it got drainage from cesspools or privies.
43. Ventilation.
44. No.

H. W. DAVIS, M. D., *Montgomery.*

1. Mountainous.
2. Talcose.
3. Numerous.
4. Soft water.
5. Rapid.
6. Largely loam (but some clay, sand and gravel).
7. None except mill ponds.
8. Yes.
9. Maple and spruce.
10. Divided.
11. Butter tubs and lumber; about 150 hands employed.
12. Soapstone; but little worked at the present time.
13. Yes. I think it can be obtained.

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14. The fog which settles in the valley nights.
15. One ; and about 150 feet from highway.
16. Lung diseases.
33. Yes.
36. Yes. In the west part of the town of Westfield in the summer of 1886, two families had funerals where children died of diphtheria, and every family that attended the funerals, had the disease, I think.
37. Whooping cough and scarlet fever have spread through the schools.
39. We have not had a case of typhoid fever in this town for 12 years.
42. Heredity and dampness.
43. Ventilation and height of seats, and the desks too far from seats.
44. No.

B. HAYNES, M. D., *Grand Isle.*

1. Very slightly hilly ; some low.
2. Black slate and some limestone and marble.
3. Scarce.
4. Hard.
5. Dry up in summer.
6. Clay, clay loam.
7. Marsh water part of the season.
8. Ten per cent or so.
9. Beech, maple, hard and soft ash, hemlock and pine.
10. Cultivated about one-half.
11. One saw mill ; three or four, about four weeks.
12. Slate quarry on Savage Island ; abandoned.
13. Not that I know of.
15. One or two in neighboring town, in country.
16. Lung fever, billious fever, consumption, indigestion, itch, rheumatism, eczema, etc.
17. Whooping cough, scarlatina, catarrh, diabetes, dropsy.
18. Last January.
19. One month since.
21. Children.
22. Not a large proportion.
23. Limited.
42. Neglected catarrh, acute and chronic; exposure, bad air, weakness, fatty degeneration of tissues, etc.
43. Heating and ventilation.

M. D., *Sheldon.*

1. Hilly.
2. Talcose schist.
3. Numerous.
4. Mildly hard. Some noted mineral spring, viz.: Missisquoi, Sheldon, Central, etc., contain sulphur, iron, salts of lime and potassium.

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5. Missisquoi river, rapid; Black creek, sluggish.
6. In the western part, sandy; north and east, clay loam.
7. No.
8. Comparatively little.
9. Sugar maple, beech, birch, elm, hemlock, spruce.
10. Grazing.
11. None of importance.
12. None at the present day. Iron has been worked here to some extent.
13. Not that I know of.
15. One; one mile out.
16. Stomach and liver derangements, rheumatism, diseases of lungs and throat.
34. Physician attending family sick with diphtheria in the spring of 1880, in an adjoining town, a distance of two or three miles. Four children died in this family. At or soon after the second child was taken, the doctor's two children were attacked and both died; no other cases in village. Doctor wore fur coat to and from.
36. No.
37. That it is the most common way in which measles, scarlatina and whooping cough are carried through a community.
38. Typhoid fever, I think.
39. From a well.
40. Below the house. The slops thrown upon the surface of the ground; privy and barn-yard upon higher ground and not over one or two rods away. Three children sick at same time—fall of 1885.
42. Heredity.
43. Imperfect ventilation, cold feet and hot heads. No attempt to protect the foundation of the school houses from the cold wind blowing under and up through the floors.
44. No positive ones.

J. S. DODGE, M. D., *Lincoln.*

1. Mountainous.
2. Limestone in the west, slate in the east.
3. Very numerous.
4. Usually soft; in some instances slightly impregnated with lime.
5. Rapid.
6. Variable; mainly light loam with subsoil of drift varying in coarseness from fine sand to boulders.
7. No.
8. Yes.
9. Spruce, maple, beech, birch, elm, but little or no hemlock and pine.
10. Grazing.
11. About a dozen saw-mills, stave mills, etc.; hands not steadily employed indoors.
12. None.

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13. No.
14. Nothing deleterious worth mentioning.
15. One ; quite secluded.
17. Measles.
18. In spring of 1880.
19. In spring of 1880.
20. Commencement.
21. All.
22. One-fourth ; there were 366 cases in town.
23. Was quite general in town.
24. None.
25. No.
26. None.
27. None.
30. Quite dry and cold.
31. No recollection of any peculiarity.
32. The spring and summer of 1878 were remarkable for an epidemic of diphtheria which I did not observe ; some 30 lives were lost, including Dr. Hier, my predecessor. Many cases have occurred since, sporadically, only one or two families being involved ; but no deaths have occurred during my stay here (nine years) from that disease.
36. Yes.
37. It is the usual method by which measles and scarlatina are communicated.
38. Drinking water is pure ; the epidemic of diphtheria in 1878 has taught the people a lesson and they heed it.
39. No typhoid in town.
42. Imperfect ventilation, unsanitary conditions, mental depression.
43. Too much ventilation ; all school houses except two are now unfit for the purpose.
44. Nothing from overwork ; many colds, etc., from continued exposure to drafts.

E. H. MARTIN, M. D., *Salisbury.*

1. For the most part hilly, though there are both mountains and lowland.
2. Am not enough of a geologist to answer in detail, but should say the common limestone, sandstone, trap and occasional veins of marble.
3. Numerous.
4. Generally strongly impregnated with lime salts.
5. Rapid, except in vicinity of Otter creek.
6. All of these, but chiefly loam.
7. Yes ; Lake Dunmore in Salisbury and Hitchcock pond, Mud pond and Silver Lake in Leicester. Quite a large area of marshy land ; three or four mill ponds.
8. Quite a good deal.
9. Oak, maple, birch, beech, elm, ash, spruce, pine, hemlock, cedar, basswood, poplar.

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10. Cultivated.
11. Three pulp mills, Salisbury Manufacturing Company, grist mill and saw-mill. Probably less than 50 hands in all.
12. None.
13. None to my knowledge.
15. There is one barn used for slaughter house, not very far from highway; does only a limited business, and is not unhygienic, so far as I know. Never heard any complaint.
17. There have not been any epidemics except pertussis and influenza, with no fatalities and so mild that only a few cases came to my professional notice. There have been sporadic cases of typhoid fever and pneumonia, measles and scarlatina, but nothing approaching an epidemic.
39. The water supply in all my cases has been wells, not so far remote from house drains and privy vaults as to be above suspicion, but the suspicions are not supported by proof positive.
43. The school houses in Salisbury are, for country towns, unusually good. If deficient to any degree having a sanitary bearing, it is in heating and ventilation.

My practice lies chiefly in Salisbury and Leicester, and as there is no physician in the latter place I venture to answer for both places, so far as my knowledge goes. I regret that my limited experience (three years) furnishes no better data.

F. H. CILLEY, M. D., *Jericho.*

1. Mountainous and hilly.
2. Granite.
3. Quite numerous.
4. Both soft and hard.
5. Mostly rapid.
6. Loam and sand.
7. No.
8. No.
9. Beech, birch, maple, spruce and hemlock.
10. Both.
11. None except a few saw mills which employ a few hands.
12. None.
13. Not as I know of.
14. I know of nothing in particular.
15. One in this part of the town which is quite near the road.
16. None now.
17. Typhoid fever since I have been here, five years.
18. August, 1883.
19. November or December of same year.
20. I had ten cases and lost one.
21. Adult males, mostly.
22. Small.
23. Limited to the center of the town, which is high and dry.
24. One in ten.
25. Yes.

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26. None; cases were well marked.
27. None; unless a few had more soreness about the mouth and throat than usual. I remember two or three cases that complained a great deal in that respect.
28. The first one taken was a robust fellow about 28 years old, a farmer and very hard worker; lived in an old house, a slop at the back door and not but a few feet from the well; most of the other cases came from this one. The oldest inhabitant did not remember of so much fever here before.
29. No.
30. Do not remember as anything peculiar; may be a little dry.
31. Do not remember.
32. I do not think of anything, only that all of the cases could be traced back to the first except one, near West Bolton.
33. Yes.
34. I have; particulars below.
35. Think not.
36. No.
37. I have had no observations in that direction. I once had a case of scarlatina carried from one to another in some newspapers, and these two the only cases in the town for a long time.
38. Have known typhoid fever to be the result.
39. Wells.
40. Near slop hole.
42. Heredity and imperfect ventilation. We have a peculiar form of lung disease in this locality, or more especially in the towns of Underhill and Bolton, near Mount Mansfield.
43. Lack of ventilation.
44. I do not remember of any in particular.

P. S.—If you wish, I will write up a few cases I have had of the peculiar lung trouble I mentioned above.

F. C. KINNEY, M. D., *Greensboro.*

1. Hilly, but not abrupt. Highest altitude of any in the State.
2. Granite.
3. Numerous.
4. Very mildly "hard" or "limey."
5. Rapid.
6. Gravel and loam.
7. No.
8. Yes.
9. Maple, birch, hemlock, spruce, fir and cedar.
10. Cultivated.
11. Lumber interests employ about 25 men in the different mills; sash and blinds, 2; wheelwrights, 3.
12. Granite quarry has been, but not very extensively.
13. None that I am aware of.
14. Long, hard winters; cool, delightful summers, with sudden changes from heat to cold.
15. There are none in town.

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16. Catarrhal and pulmonary.
43. Very poorly ventilated and heated.

As I have not been in town quite five years yet, I cannot give as much information as I might otherwise have done. Our town is considered very healthy. We have very few sporadic cases of typhoid fever. There have been some severe cases of diphtheria in the eastern part of the town, on the headwaters of Lamoille river, but that was before I came to town.

Any information which I can supply will be freely given.

J. T. MILES, M. D., *Hinesburgh.*

1. Comprises a variety of each.
2. In western part, lime; eastern, transition.
3. Yes.
4. In western part, hard; eastern, soft.
5. About medium.
6. Clay in the west; sand and gravel in the east; loam in central, or valley of Laflot river.
7. No stagnant water; one pond, natural; one, artificial; clear, pure water.
8. No.
9. Beech, maple, hemlock, interspersed with every variety almost.
10. Used mainly as farming lands.
11. Flannel factory; employs about 15 hands. Foundry; about five hands. Saw-mill; about five hands. Excelsior; employs four hands.
12. None.
13. No.
15. Two; about 12 rods from highway.
16. None.
17. About 30 years since, diphtheria prevailed for one winter.
20. At commencement.
21. Children.
22. About one-eighth.
23. Most of the town.
24. About one in twenty.
25. No.
29. One; in child about one and a half years old, entire closure of the glottis.
30. An ordinary Vermont winter.
31. Do not recollect.
32. None.
33. Yes.
34. Yes. One child with mother visited where a child died, and was while sleeping placed in the room and bed which were occupied by the person who died.
35. Experience very limited.
36. No.
37. Only measles and whooping cough.

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38. The only cases I ever knew in town were two that could be traced to the contamination of cistern and well by leakage from privy.
39. A well.
40. Quite near dwelling.
42. Heredity.
43. Ventilation.
44. None that could be traced absolutely.

D. F. RUGG, M. D., *Hartland.*

1. Hilly; low along Connecticut river.
2. Lime.
3. Numerous.
4. Largely what is called hard; some streams the same.
5. None sluggish.
6. Mixture of clay, sand and gravel; little loam.
7. A few; about a dozen in a wet time.
8. Very little.
9. Pine, maple, oak, white birch.
10. About equally divided.
11. Ottaquechee Woolen Company (shoddy), 90 hands; North Hartland. All others, as door, sash, etc., blankets and wood work, about 50 hands.
12. None.
13. Hosea Doten's estate, Woodstock or vicinity, has the only record I know of for this vicinity.
15. Two; one within ten feet.
16. Consumption; bronchitis.
17. Pertussis, measles; mild.
23. Limited.
24. None fatal.
33. Very seldom.
36. Not in Hartland.
37. Where there was exposure to diseases mentioned, nearly all that had never had them were sure to have it.
38. Think some cases of typhoid fever at North Hartland in 1875 were caused by drinking impure cistern water; cistern of wood, old and rotten, situated near sink drain and not far enough from privy vault.
39. See above; (also foul wells).
40. Near privy vault; near bank of brook.
42. Heredity.
43. Ventilation.
44. No.

FERD. L. LADUE, M. D., *Alburgh Springs.*

1. Level; sloping to Lake Champlain.
2. Slate.
3. Numerous.
4. Sulphurous and chalybeate. I enclose analysis of one.
5. Sluggish.

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6. Clay in part of town; loam in part.
7. No ponds; some stagnant water in early summer in swamp, center of town.
8. No.
9. Maple, elm, poplar, cedar.
10. Cultivated.
11. None.
12. None.
13. No.
14. Swamp in center of town.
15. One; only a few rods.
16. Pneumonia, typhoid, enteritis, bronchitis.
17. None.
33. Yes; of the exanthemata, mumps, etc.
34. No.
35. No.
36. No.
37. Schools are the hot-bed for contagion, especially the diseases of childhood—measles, scarlatina, parotitis, varicella, whooping cough, etc.
38. Families whose drinking water is foul are continually sick, anæmic, and have no power to withstand disease.
39. Wells.
40. Near barnyards.
42. Heredity and exposure to cold; also, to some extent, dampness.
43. Ventilation; unsuitable desks; straight-backed, narrow seats, causing round shoulders, contracted chest, from leaning forward on elbows to study; also lighting is defective, the light being on the wrong side of the house.
44. I have known of serious diseases originating by the unsanitary condition of schools, and too close application to study by children stimulated by rivalry in prize taking, the body strength being expended in support of the brain. Have noticed considerable lateral spinal curvature in girls from defective seats in schools.

P. P. WHITE, M. D., *Williamsville.*

1. Hilly.
2. Mica schist.
3. Numerous.
4. What we term soft water.
5. Rapid.
6. Sand and Loam.
7. One pond, stagnant water, under hotel barn the year round, which causes talk, but no removal.
8. No.
9. Beech, birch and maple.
10. Mostly devoted to grazing.
11. Saw mills are numerous where lumber is got out, and some chair stock. Butter tubs are made on a small scale, but few hands are employed.

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12. Granite quarries at West Dummerston—twenty-five to forty men are employed.
13. Do not think one has been kept.
14. Sudden change in temperature.
15. One, between two and three rods from highway and in the middle of our little village.
16. Pneumonia and bronchitis.
17. Scarlatina.
18. December 1884.
19. August 1886.
20. At close.
21. It was pretty general.
22. Fifteen per cent, about.
23. Widespread.
24. About three per cent.
25. Nothing special.
29. None are held.
32. Unusually light.
33. No.
34. I think scarlet fever was communicated to a little girl by myself where I was boarding. She was in my lap a great deal.
35. Have not.
36. No.
38. I have noticed business for the profession.
39. From a well.
40. It was on lower ground than where barn and house stood.
42. Heredity.
43. Heating.
44. Yes.

J. AVERY, M. D., *Wallingford.*

1. Valley. High and moist land on both sides.
2. Limestone in the east; slate and limestone in the west.
3. Numerous—the principal water of the village.
4. Hard.
5. (Otter Creek) sluggish; brooks on hills, rapid.
6. Loam and gravel.
7. Two or three ponds in town. No stagnant water near the village.
8. No.
9. Maple, hemlock, spruce, birch.
10. Grazing, principally.
11. Forks, snow shovels, ox-bows. Between 40 and 50 men employed.
12. Small marble quarry at South Wallingford, from six to ten hands, and an iron ore bed and kaolin bed are being opened at South Wallingford.
14. The air in the village is very damp from the proximity of the creek and the springs on the hillsides.
15. Two; one in outskirts of village about ten rods from road, and the other one mile south of village and about six rods from highway.

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16. Rheumatism, bronchitis, phthisis, dyspepsia, pneumonia, scarlet fever.
17. None since I have been here (7 years).
34. Two cases in an epidemic of measles occuring before I came here. One case, a grandmother came from the house where several were sick with the disease and took up one of her grandchildren and took care of it. In about twelve days it came down with measles.
35. No.
36. No.
37. No instance has occurred since I have been here, except in an epidemic of pertussis.
38. Had two cases of typhoid fever which I think were caused by the sink drain being too near the well.
39. A well.
40. About 12 feet from a sink drain.
42. Exposure, heredity, imperfect ventilation.
43. Ventilation, lighting. In the school houses in our village, windows are placed back of the teachers, and there is no adequate means of ventilation, without dropping the windows.
44. No.

M. D., *Middletown Springs.*

1. Hilly.
2. Limestone and slate.
3. Numerous.
4. Soft.
5. Rapid.
6. About an equal number of all.
7. Two mill ponds.
8. No.
9. Maple, oak, birch and beech.
10. Grazing.
11. Gray's "horse-powers;" 25.
12. None.
13. None.
15. Two; one-fourth mile.
16. Pneumonia, scarlatina, measles, typhoid and hepatic.
17. Scarlatina.
18. November 1st (about), 1883.
19. About January 1st, 1885.
20. Toward the close.
21. Children; males and females equally.
22. About eight per cent.
23. Widespread.
24. One in thirty.
25. No peculiarities.
30. Do not recollect.
33. Yes.
34. Yes; case of clothing packed away at commencement of illness, which was not removed for nine months, when it was given

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to other persons who carried some to their house. As a result a 12-year-old girl came down with scarlatina, who was positively known not to have exposed herself.

35. See question No. 34.

36. None.

37. Measles and whooping cough have both caused our schools to close its doors in consequence of its rapid spread among the pupils.

38. Typhoid, dysentery, and notably diphtheria.

39. Well water.

40. About 20 feet from house, and same from barn.

42. Hereditary predisposition, which any or all of the others mentioned, in operation, will develop the disease. The most important of these I regard as infection, having observed to date three cases, as wife after death of husband of phthisis; as sister after death of sister of phthisis; as sister after death of brother of phthisis. In each case a hereditary predisposition existed, and in each case the victims were in contact with the sources of infection almost constantly in capacity of nurses.

43. Heating.

44. None.

JOEL ALLEN, M. D., *Johnson.*

1. Mountainous and hilly.

3. Numerous.

4. Springs are soft water, mostly. The wells in the valley of the Lamoille are hard, but up from the river a mile or more the well water is less so.

5. Rapid.

6. Near the river is loam with clay sub-soil, next a belt of clay, next a loam and gravel; isolated tracts of sand, but none large.

7. No.

8. Yes.

9. Maple, spruce, birch, hemlock, beech, elm, etc.

10. About equally divided.

11. Lumber is the chief; four mills, employing from 60 to 100 men; butter tub, 25 men; rake, six men; woolen factory, 12 men, four girls; butter worker, eight men.

12. None.

13. No.

15. One, about six rods from a highway, one and one-half mile from the village.

16. Pneumonia, bronchitis, rheumatism, etc., from cold weather; cholera, dysentery, fevers—bilious, typhoid.

17. Diphtheria in 1877–8; again 1880; measles, 1885; scarlet fever, 1886. In 1884 there were many cases of typhoid fever, but would hardly be called epidemic.

18. Diphtheria, November, 1877; measles, January, 1885; scarlet fever, December, 1885.

19. Diphtheria, spring, 1878; measles, July, 1885; scarlet fever, spring, 1886.

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20. Diphtheria, commencement; measles, most severe in June; scarlet fever was not severe.

21. Diphtheria, children; measles, children; scarlet fever, children.

22. Diphtheria, perhaps one-half the children; measles, about one-half under 20; scarlet fever, about one-half or more of the children.

23. Diphtheria, widespread; measles, widespread; scarlet fever, through the town.

24. Diphtheria, not a large proportion taken all through, but the first eight cases were fatal; measles, to estimate, one in 40; scarlet fever, only one fatal case in 100 or more.

25. Diphtheria, no special peculiarities; measles, no special peculiarities; scarlet fever, the one fatal case died from hemorrhage of the ear as a result of the attorrhœa.

27. Scarlet fever, one case was followed by a suppurative inflammation of the knee joint.

29. There were none.

30. The winter in which diphtheria prevailed was an "open winter," frequent changes.

31. Do not remember.

33. Yes; scarlet fever frequently occurs in different parts of the town, but does not become general.

34. Yes; in the epidemic of measles the clothing of a patient was taken out to be washed, and the children assorted the clothing for the wash and in the proper time came down with the measles. There was no other known exposure.

36. No; the diphtheria funerals were private by request of the authorities.

37. In all the epidemics the disease was spread largely through the schools.

38. In 1882, diphtheria appeared in two families using water from the same well. All the slops from one house were thrown on the surface of the ground about four rods above the well; soil sandy and nothing to prevent its drainage into the well. There were eight cases of diphtheria, two proving fatal. There were no other cases in town. I thought the cause of the disease to be pollution of the water.

39. In August, 1885, typhoid fever occurred in a family living on the top of a hill about a half mile from the village, and about one-fourth mile from a neighbor. It was the family of a well-to-do farmer, consisting of eight individuals, being parents and six children, all of whom had typhoid fever, and the mother died. The water supply was from a spring about eighty rods from the house; supply abundant and running all the time. The sink slops were carried about four rods from the house in a covered drain and then left to flow on the surface of a level piece of ground. The privy was an open vault, attached to the house. A window from the milk room, closed only by a fly screen, opened only about three feet from the door of the privy. This condition of the sink drain and privy being so near the open window of the milk room where

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the milk was set in open pans, was, in my opinion, the cause of the disease affecting this family and no other. These faults were rectified and the nurses and other help that had to stay six to eight weeks to care for the family all escaped.

41. Typhoid fever appeared in a tenement that was supplied with water from the Gihon river. Five of the nine occupants suffered from the disease, one case proving fatal from perforation of the intestines. There was one case in adjoining house, but the remainder of the village were free from it. The Gihon river is about 15 miles long, rising in Eden and emptying into the Lamoille at this place. It is full of decaying sawdust, receives the drainage of three villages, besides farm buildings, woolen factory, etc.

42. In my observation I think that heredity, excited by pneumonia, has been the most frequent cause. (I could give data, if desired.)

43. Ventilation; heating; cold floors; filthy and uncared-for water closets; decaying rubbish about.

44. A family of kittens were left by their mother in the wall of the school-house; the house was patched up for the summer school, and the hole in the wall was closed. The odor became bad, the scholars and teacher were all sick with vomiting and diarrhœa, the school was closed for two or three weeks, the odor tracked home, carrion removed and all things were well again. Is it not reasonable to attribute the illness of all to the carrion?

H. D. Belden, M. D., *Fairfield.*

1. Hilly.
2. Slate, mostly.
3. Numerous.
4. Hard.
5. Rapid.
6. Clay.
7. No.
8. No.
9. Hemlock and maple.
10. Grazing.
11. None.
12. Several iron ore mines; not worked for the past two years.
13. I think not.
15. None in this village or within five miles.
16. Lung diseases.
17. There has been no epidemic within the past 20 years.
33. Yes; all the rashes.
34. See question 39.
38. See below.
39. From a spring, the water being brought partly through logs and partly lead pipe; running under the horse barn of a hotel. Three deaths within six years from typhoid fever.
42. This is an Irish community; the older people mostly emigrants, their children almost invariably have consumption. I

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think the change from the moist atmosphere of Ireland to this high and dry climate is favorable to lung troubles, and is inherited by the children.

43. Ventilation.

44. Not in this town.

F. W. GOODALL, M. D., *Bennington.*

1. Village flat, level, sloping sharply (200 feet to the mile, about) to the west; surrounded by hills and mountains.

2. Limestone and what are locally called "hard-heads."

3. I would say a fair supply.

4. Some immensely large ones; soft water and of such a character that no fish can live in them. My knowledge of the others is negative. Wells variable in hardness; have both extremes.

5. Rapid.

6. Our village is sandy, gravelly and full of "hard-heads" on the "flat;" around the flat portion of it, it is clay and loam.

7. Only two small mill-ponds.

8. No.

9. Maple, birch, beech, spruce, hemlock, oak and ash.

10. Ordinary farming outside the village.

11. Hosiery goods, machine shops and novelty works (wooden ware); several hundred.

12. Stone and iron; little or none. Clay (white), ochre, etc.; quite extensively worked.

13. Dr. H. C. Day, Bennington, and Dr. S. E. Ranney and Dr. L. B. Newton of North Bennington are our weather observers.

14. In our village we have a very dry soil, open, porous and stony. Much water power, but it is confined very largely in cylindrical "trunks," and used over and over, and so on, being conveyed through our village under residences, churches, etc., with no water surface exposed, thus tending to dryness rather than humidity.

15. Several.

16. Should say none.

17. Measles.

18. 1872; September or October.

19. Late winter or early spring.

21. No age exempt and no respect for sex.

22. A very large.

23. Very general.

30. Epizootic in horses was very prevalent at the same time, I think.

31. Don't recall.

33. Of various diseases, as measles, diphtheria, mumps, scarlet fever, etc.

34. I visited many sick with diphtheria at Hoosac Falls (14 miles away) in the winter. From 2 p. m. until 8 p. m. in different houses, and in grave cases nearly all the time. At about 8 p. m. muffled myself closely in my robes and buffalo coat, tied my heavy fur collar closely about my neck, head and face, and drove home in my sleigh. I wear a full beard. Soon after I arrived home I

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went to bed with my son (about 14) without washing out my hair or beard; of course my hands were washed; I am always particular with them. In a few days my son sickened with diphtheria and was quite sick for a week or more, and no other case anywhere in town, as I now remember, and had been none for a long time.

36. Do not recall any.

37. Our school authorities and most of our physicians exercise such caution as to make my observation very limited, although I think I have seen diphtheria get nearly all the foothold in our village it ever had by children being taken sick in school.

GEORGE DAVENPORT, M. D., *East Randolph.*

1. Hilly.
2. Mica schist, or clay slate.
3. Numerous.
4. On the west side of our valley the water is hard, on the east side it is soft, and rain water for washing is not used.
5. The smaller streams are rapid.
6. The soil is clay loam, with sandy loam in places.
7. But little stagnant water.
8. From a quarter to a half.
9. Maple, beech and birch.
10. Mostly grazing.
11. None.
12. None.
13. No.
15. None in this part of the town.
16. No prevailing disease.
17. Typhoid fever, measles and scarlatina.
18. 1853 and 1857; various years.
20. Yes.
21. Children.
22. Cannot tell.
23. Generally confined.
24. Very small per cent.
25. No.
27. None.
30. I never could satisfy myself on this point.
33. Yes.
34. No.
35. No.
36. No.
37. Usually schools are dismissed and discontinued when an epidemic breaks out among the scholars.
38. No serious effects.
39. Springs and wells.
42. Heredity.
43. School houses very good.
44. No.

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N. P. Wood, M. D., *South Londonderry.*

1. Mountainous and hilly.
2. The mica-bearing series.
3. Numerous.
4. Nearly all the springs give "soft" water, but the wells yield "hard" water.
5. Rapid.
6. Loam with some gravel.
7. Several ponds.
8. An average amount for Vermont.
9. Maple and beech, also considerable hemlock and spruce.
10. The farms are divided so as to winter as much stock as they can pasture.
11. Chair stock and lumber. Some of the mills employ 10 or 12 hands, while others employ not more than four or five.
12. None.
13. None.
14. The sewerage of South Londonderry empties into West river; two mill-ponds receive the drainage, from which nearly all the ice used in this vicinity is obtained.
15. Three; all of which are near the public highways, but none in the villages.
16. Rheumatism, typhoid fever, arthritis deformans, bronchitis, diphtheria, tonsilitis, phthisis.
17. Diphtheria.
18. September, 1883.
19. October, 1883.
20. Commencement.
21. Children.
22. About three per cent in the town of Peru.
23. Confined to Peru.
24. Two deaths in twenty cases.
25. No paralysis followed. Other symptoms corresponded to text-books.
26. No other.
27. None.
28. Do not remember as any.
29. No post-mortems.
30. Previous to the epidemic a severe frost killed the vegetation, followed by heat and moisture.
31. Rather dry.
32. The disease appeared in isolated families, surrounded by the best sanitary conditions. Also in families just the reverse.
33. There are.
34. Books thumbed by sick children were carried two miles and there looked over by other children, who were soon attacked by this disease. In another case a doll carried the contagion.
35. One case where the desquamation of scarlet fever, placed in a child's bank, retained vitality ten months.
36. No.
37. There has been none here since I came here, five years ago.

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38. I have had two cases of typhoid fever, which undoubtedly came from pollution drained from privy-vaults to wells from which drinking water was obtained.
39. Nearly all from springs some distance from the buildings, obtained through lead pipe or logs.
41. None from a river.
42. Heredity and unsanitary conditions.
43. Ventilation and heating.
44. Not serious; but I have noticed not a little headache, bronchitis, catarrh, both acute and chronic, and conjunctivitis, arising from unsanitary conditions.

O. G. DYER, M. D., *Brandon.*

1. Hilly, and some low land.
2. Lime.
3. Scarce.
4. Hard.
5. Rapid.
6. All varieties, but mostly sand.
7. No.
8. No.
9. Maple, birch, swamp cedar and beech.
10. Cultivated.
11. Newton Manuf'g Co.; about 100 hands employed.
12. Bar.
13. I think Mr. J. A. Conant keeps it.
14. A system of water works, with improper sewerage.
15. Two, and remote.
16. Pulmonary troubles during winter months, and some continued fever; a few diarrhœal diseases in summer.
17. Scarlatina, measles.
18. December, 1867; ended in March, 1868. Think there was another a few years later.
20. Commencement.
21. Children, largely; both sexes.
22. A majority of the children; many adults in measles, but mostly children.
23. Widespread.
24. Nine per cent in measles; deaths exceptional, and only from complications—usually pulmonary.
25. No.
26. None.
27. None.
28. Convulsions in some, anginose in others.
29. None made.
30. Rain and snow.
31. Do not remember.
32. None.
33. Yes.
34. Never investigated for want of time.
35. None, so far as observed.

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36. No.
37. None except measles and mumps.
38. None.
39. Wells.
40. Usually near the house.
41. None traceable.
42. Heredity, imperfect ventilation, and the usual unsanitary condition of houses have some undoubted influence.
43. Ventilation, and in district schools, heating also.
44. No.

(NOTE.—With no sanitary regulations, nor means to have any, typhoid fever has steadily declined, and is now exceptional.)

S. T. BROOKS, M. D., *St. Johnsbury*.

1. Hills generally, except in valleys of Passumpsic, Moose, and Sleeper's river
2. Calcareous mica schist.
3. Quite numerous.
4. Slightly impregnated with lime; a good deal of organic matter in the wells.
5. Sluggish in the Passumpsic; quite rapid in Moose and Sleeper's rivers.
6. Surface loam, with sand and gravel below, and a clay bottom.
7. Stiles pond, three miles east of St. Johnsbury, supplied mostly by springs.
8. Comparatively little except sugar maple orchards.
9. Maple, beech, birch (yellow and white), spruce, hemlock and cedar.
10. About 10 per cent cultivated.
11. Fairbanks Scale Works, employing 600 men; Granite Works; Carrick & Co., 25; Leind & Co., 15; Flouring Mills, Hoe Manuf'g Co.; Foundry; Planing Mills & Lumber Co.; Electric Plant; File Manufacture.
12. Slate quarry, three miles east of St. Johnsbury; not worked.
13. Such a record has been kept by C. C. Bingham and published in *Caledonian*. It is proposed now to have a more minute record kept at the rooms of the Y. M. C. A., in connection with weather reports.
15. Two; largest, one-fourth mile from village and 20 rods from highway; second, one mile from village and 15 rods from highway.
16. Catarrhal affections of nares, fauces, bronchi and stomach.
17. Diphtheria.
18. 1860; do not know month; my residence here dates from 1862.
19. The close of 1865.
20. Commencement.
21. Children; about an equal number of each sex.
22. Approximately 10 per cent; cases most frequent in the hilly regions among the farming class.
23. Widespread.

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24. Fifty per cent during its earlier prevalence.
25. For the most part.
26. None.
27. None.
28. None.
29. None.
30. Winters open ; great extremes.
31. Was not here.
33. Since 1865, occasional sporadic cases; the earliest being most malignant.
34. Cases came under my observation where the contagion was certainly communicated by clothing.
35. Yes.
36. No.
37. Have seen no positive proof of contagion spread in this way.
38. The termination of sink drains just outside of the well of the house, has, in my opinion, been a very frequent source of diphtheria.
39. A spring about a hundred rods from the house.
40. Lowest point in a field, cultivated, and fertilized by manure in part taken from privy vaults.
42. Heredity, and dampness originating from wet cellars.
43. Ventilation, very imperfect, excepting in the two central houses of our village.
44. A good many such cases, caused by over-work ; too many studies, or those not adapted to the scholar's capacities or tastes.

A. H. CHESMORE, M. D., *Huntington.*

1. Mountainous and hilly.
2. Dark gray sandstone.
3. Numerous.
4. Springs, soft ; wells, hard.
5. Rapid.
6. Loam, chiefly ; some gravelly.
7. Only one.
8. Yes.
9. Maple, beech, birch, and on the mountains spruce.
10. The intervales cultivated ; the hills grazing.
11. The manufactures ; lumber, staves, shingles, clapboards and cheese boxes ; number of men employed, should say 25.
13. No.
15. Two ; about fifty rods from the highway, and about one-fourth mile from village.
17. Measles once or twice.
18. Do not recollect ; a good many years ago.
20. Can't say.
21. Children.
23. Widespread.
24. I think not any.
25. Don't recollect.
30. Don't remember.

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33. Yes.
36. No; we don't allow public funerals in cases of death from epidemic diseases.
37. They are certainly the means of spreading contagious diseases, and should be closed during its continuance.
38. I can recollect of but one death which I was sure was caused by sink drains.
39. I have not had a case of genuine typhoid fever in ten years.
42. Heredity, exposure, mental depression. This town and vicinity is almost exempt from phthisis. I do not remember of a person dying of the disease in fifteen years.
43. We have some very good modern school houses, and some that are bad every way.
44. I don't recollect of any, but have no doubt that many serious diseases have been caused by unsanitary conditions of some of our school houses.

B. J. ANDREWS, M. D. *Richmond.*

1. Valley, surrounded by hills.
2. Sandstone and quartz.
3. Numerous.
4. Springs, soft; wells, hard.
5. Rapid.
6. Clay and gravel.
7. Yes.
8. Not much.
9. Maple, birch, beech, pine and hemlock.
10. Equally divided.
11. None of note.
12. None.
13. Nothing for past five years. Mr. Nelson Rhodes has records for a number of years previous to that time.
15. Three; all within a few rods from the highway and houses.
16. Zymotic.
17. Scarlatina.
18. Winter of 1885, and 1886.
19. April, 1886.
20. Close.
21. Children.
22. Small.
23. Widespread.
24. Very small.
25. It did correspond.
26. None.
27. None.
28. None.
29. None.
30. The usual winter weather.
31. Rather cool.
32. None.
33. Yes.

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34. No.
35. No.
36. No.
37. Has not been very great.
38. None.
39. Have seen none.
42. Very few cases have been known here for past forty years, and in those cases all were seated before coming to this place.
43. Ventilation.
44. Have not.

J. H. HAMILTON, M. D., *Richford.*

1. Mountainous.
2. Lime.
3. Numerous.
4. Springs, soft ; wells, hard.
5. Rapid.
6. Mixed ; clay and loam.
7. Three ponds within a radius of five miles—small ones.
8. Yes.
9. Mixed ; hard and soft.
10. Mainly to grazing or grass.
11. Lumber, sash and doors, veneering, etc.; about 150.
12. None.
13. No.
15. One ; fifty rods from highway.
16. Catarrhal.
17. Typhoid fever or cesspool (Dr. Alonzo Clark).
18. February, 1877.
19. March. 1877.
20. No difference.
21. Both alike.
22. One two-hundredth.
23. Mostly in Richford village.
24. Ten per cent.
25. Yes.
26. Hemorrhage from bowels.
30. An open winter; rain just before appearance of fever.
31. Nothing unusual.
33. Yes.
34. No.
35. No.
36. No.
37. A favorable means of spreading contagion.
38. The fever of 1877, caused by pollution of drinking water.
39. All from the polluted wells.
40. At the foot of a hill which received the drainage from a barn above when fever existed.
42. 1st, imperfect ventilation ; 2d, exposure ; 3d, dampness ; 4th, infection ; 5th, mental depression.
43. Our school houses lack all.
44. No.

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VERMONT CLIMATE.

—:o:—

— BY DR. HIRAM A. CUTTING. —

—:o:—

The science of the weather and the climatic influences upon health, are attracting the attention of thousands, who are anxious to learn all that can be told of weather and climate.

It is a science to which it is as easy for young as old to become votaries, and every town of any size has its weather-wise men and women, that think they can foretell storms or coming sickness from the signs of various things around, which they have duly observed. There are today however, many of these sayings of doubtful value, especially as regards the moon's effects, the present length of seasons compared with former times, the amount of rain, the depth of snow, the coming of diseases, etc. This can be checked only by long, continued and careful observation upon temperature, rain, wind, ozone, thunder storms, frosts, amount of vapor and every atmospheric phenomenon. The observer, to have his observations of value, must be honest, faithful, exact and persevering, and have an assistant as able as himself. Many of the observations can be taken by a child with a few simple directions, but must be subjects of record and thought.

There are also general phenomena of climate that are of great value when kept for a series of years; such as the breaking up of ice in rivers, ponds and lakes, as well as their first freezing over; dates of high and low water in large rivers; general leafing and blossoming of plants; the fall of the leaves; the coming of migratory birds and their leaving; also, the time of epidemics and the condition of streams, ponds and vegetation at such times, and many other things are desirable; as the time of sap flow, its abundance and peculiarities; the planting of crops, their flowering and maturity, their harvesting and their condition when housed, as they all have some bearing upon the food supply and the health of man and beast.

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There are further, many climatic observations that are believed to directly or indirectly influence health that should be carefully noted. The blue colors of the sky, as it has an intimate connection with the hygrometrical state, and the electrical tension of the air. Haze, dry mist, intense cloudiness and any phenomena that seem to effect man, or the crops upon which he subsists. Dews, whether spare or abundant. Mists hanging over forests, meadows, rivers or the like, and whether falling, rising, dense or light, should all be noted. Many observations of value you will see, can be made without instruments, but the use of, and records from the thermometer, barometer, rain guage, anemometer, psychrometer, hygrometer etc., are very desirable, and as standard instruments are so cheap at the present time, many can afford to purchase, and to all, such observations are of value.

By request of the Board of Health I furnish some data and tables from observations kept continuously for thirty-nine years.

For this period the heat of summer has not exceeded 100 degrees, and but twice has the thermometer touched that point. It has once touched 45 degrees below zero. The extreme heat of summer rarely exceeds 90 degrees, and the cold of winter is seldom greater than 25 degrees below zero.

The average number of stormy days in a year for this period has been 120, and the average number of fair days 118, of cloudy days 127. From this it is reasonable to infer that our time is about equally divided into fair, cloudy and stormy weather. In summer we have an excess of fair weather, while in winter there is an excess of stormy or cloudy weather.

The lines of temperature are by no means regular. England, six or eight degrees farther north than we are, has a climate warmer than New York city. And Quebec, on the St. Lawrence, has as cold a winter as the interior of Siberia; while Canada West, in higher latitude, is as warm as Masachusetts, and the winter is full six weeks shorter than at Quebec. Still the summer at Quebec is as warm as is the summer of Italy, where snow never falls. Thus we see how the lay of the land, and the currents of air and of water affect climate quite as much as latitude. In a hilly State like Vermont, the streams of cold in the winter are nearly as regular as the streams of water in summer. The air in contact with the earth becomes colder, and for that reason heavier, and so flows down our valleys like streams of water. In the Connecticut river valley runs down a great stream of cold air, making quite regular temperature in winter the whole length of the State, and

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bending the annual temperature lines at least fifty miles further south in that valley than on the hills.

The annual rainfall averages at this place slightly over 40 inches while in the southern part of the State it is about 46 inches, being gradually less northward. About Lake Champlain it is only 37 inches. The heaviest rainfall was in 1872, about 61 inches. The smallest in 1880, being scarcely more than half that amount.

Ozone is variable, running through the entire scale of 10. It is irregular in supply and hardly remains long enough the same to have its effects observed. When in excess, it is probable that catarrhal diseases are more prevelant or more persistant, and that the difference in altitude has hence some affect upon health, as ozone increases to an altitude of three thousand feet. More observers in the State are necessary to establish these facts.

The following tabulated observations for 1886 are submitted as better showing our climatic and atmospheric conditions than language can do. These observations were taken from standard instruments furnished by the United States government, and are tabulated and revised according to their formulas. The observatory is in Lat. 44° 27′ 43″, Lon. 71° 41′ 47″. Height above sea level 1210 feet.

The object of these observations is to enable the Chief Signal Officer, U. S. Army, to prepare a series of maps to illustrate the face of the sky, &c., over the United States for every day in the year, and thus to study the rise, progress, and course of American storms. Observers will be supplied with full directions for using all the instruments, on application to the Chief Signal Officer, Washington, D. C.

EXPLANATION OF THE COLUMNS.

THERMOMETER IN THE OPEN AIR.

This is intended for the register of the thermometer and temperature of the air. The daily mean is to be found by the formula $\frac{1}{4}(7 + 2 + 9 + 9)$.

RAIN AND SNOW.

Under this head are entered the time of beginning and ending of the fall of rain or snow, and the true depth, in inches and hundredths, of the fall of rain or melted snow; also the depth of the snow. Amount of rain or melted snow should be recorded in inches, tenths, and hundredths, thus: 1.25, 6.03, 0.01, etc.

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CLOUDS.

Under this general head are enteredthree daily observations on the aspect of the sky, etc.: 1st. The "Amount of cloudiness," designated by figures, 10 being entire cloudiness; 5 half cloudiness; 0 entire clearness; and intermediate numbers in proportion. 2nd. The "Velocity," or rate of motion, 10 being the highest, and 0 apparent rest. 3d. The description or "Kind of clouds," to be entered by means of the following abbreviations: *S.*=Stratus; *Cu.*=Cumulus; *C.*=Cirrus; *N.*=Nimbus; *C.s.*=Cirrostratus; *Cu. s.*=Cumulo-stratus; *C. cu.*=Cirro-cumulus.

WINDS.

This is for the record of the direction *from* which the wind is blowing, and its force. The direction is to be entered in eight points of the compass: N., N.E., E., S.E., S., S.W., W., N.W., and if practicable the intermediate half points. The force is to be estimated and registered by figures from 1 to 10, as in the first column of the following table. A little practice will enable Observers to make use of the figures in the first column, corresponding to light, gentle, fresh, strong, etc., with accuracy, and it is very important that such should be the case to make the record reliable.

0.	Calm.								
1.	Very light breeze,	varies	between	1	and	2	miles	per	hour.
2.	Gentle breeze,	"	"	3	"	5	"	"	"
3.	Fresh breeze,	"	"	6	"	14	"	"	"
4.	Strong wind,	"	"	15	"	29	"	"	"
5.	High wind,	"	"	30	"	39	"	"	"
6.	Gale,	"	"	40	"	59	"	"	"
7.	Strong gale,	"	"	60	"	69	"	"	"
8.	Violent gale,	"	"	70	"	79	"	"	"
9.	Hurricane,	"	"	80	"	99	"	"	"
10.	Most violent hurricane,	"	from	100	upward.				

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METEOROLOGICAL RECORD FOR THE MONTH OF JANUARY, 1886.

Place of observation: Lunenburgh, County of Essex, State of Vermont; latitude, 44°, 27′ 48″; longitude, 71°, 40′, 47″; height above the sea, 1210 feet.

Day of Month.	Scale of 10 Ozone.	THERMOMETER IN THE OPEN AIR.				RAIN AND SNOW.				CLOUDS.			WINDS.						Day of Month.
		7 A.M.	2 P.M.	9 P.M.	MEAN	Time of begin'g of rain or snow.	Time of ending of rain or snow.	Total amt. rain and melted snow in inches.	Av. depth of snow-fall in inches.	7 A. M. Lower Clouds. Kind, am't.	2 P. M. Lower Clouds. Kind, am't.	9 P. M. Lower Clouds. Kind, am't.	7 A.M. Direction	7 A.M. Force.	2 P.M. Direction	2 P.M. Force.	9 P.M. Direction	9 P.M. Force.	
1	5	25	35	32	.....	.....	8 a.m.	.25	.....	10 N.	10 Cu.	8 Cu.	N.E.	0	N.	0	W.	0	1
2	4	28	36	30	.....	.....	.....	.....	.....	0	10 C. Cu.	10 C. Cu.	N.	0	W.	0	N.	0	2
3	4	30	38	28	.....	.....	.....	.....	.....	10 C. Cu.	10 Cu.	10 C. Cu.	W.	0	S. W.	0	N.W.	0	3
4	5	32	42	30	.....	10 p.m.	—	.....	.....	10 Cu.	10 Cu.	10 N.	N.	0	W.	0	N. E.	3	4
5	5	38	40	34	.....	—	9 a.m.	.50	.....	10 N.	8 Cu.	5 C.	N.E.	2	S. W.	1	W.	0	5
6	5	34	28	8	.....	8 a.m.	10 p.m.	.20	2.00	10 N.	10 N.	5 Cu.	N.	1	N. W	2	N.	0	6
7	6	0	5	-8	.....	.....	.....	.....	.....	5 C.	0	0	N.W.	0	W.	0	N W.	0	7
8	6	-3	4	-2	.....	.....	.....	.....	.....	0	0	0	N.	0	W.	0	N. E.	0	8
9	6	3	14	10	.....	1 a.m.	5 p.m.	.40	4.00	10 N.	10 N.	10 Cu.	E.	4	S. E.	2	W.	2	9
10	7	5	14	8	.....	.....	.....	.....	.....	0	0	4	N.W.	1	N.W.	2	N.W.	1	10
11	7	5	12	5	.....	.....	.....	.....	.....	10 Cu.	0	0	N.W.	1	N.W.	1	N.W.	1	11
12	7	-20	-8	-22	.....	.....	.....	.....	.....	0	0	0	N.W.	1	N.W.	1	N W.	1	12
13	7	-17	8	-5	.....	.....	.....	.....	.....	0	0	0	N.W.	1	N.W.	1	N.W.	1	13
14	6	-19	16	-5	.....	.....	.....	.....	.....	0	0	0	N.W.	1	N.W.	1	N.W.	1	14
15	6	-10	14	3	.....	.....	.....	.....	.....	0	0	0	N.W.	1	N.W.	1	W.	1	15
16	6	7	20	18	.....	.....	.....	.....	.....	0	0	0	N.W.	1	N.W.	1	N.W.	1	16
17	6	23	29	24	.....	7 a.m.	11 a.m.	.20	2.00	10 N.	10 Cu.	10 Cu.	W.	1	S. W.	1	S. W.	2	17
18	6	4	15	0	.....	4 a.m.	—	.....	.....	0	0	0	N.W.	0	W.	0	N.	0	18
19	5	8	22	15	.....	—	6 a.m.	.80	8.00	10 N.	10 N.	10 N.	N.E.	0	S. E.	1	N.W.	2	19
20	5	16	20	7	.....	.....	.....	.....	.....	8 N.	0	0	N.W.	4	W.	0	N.	0	20
21	5	20	32	28	.....	.....	.....	.....	.....	0	5 Cu.	10 C. Cu.	N.	0	S. W.	1	W.	0	21
22	4	26	34	35	.....	.....	.....	.....	.....	8 Cu.	8 Cu.	10 Cu.	N.E.	0	S W.	0	N. E.	0	22
23	4	0	6	-4	.....	.....	.....	.....	.....	0	5 Cu.	0	N.	0	W.	0	N.W.	1	23
24	4	-10	0	-14	.....	.....	.....	.....	.....	0	5 Cu.	0	N.W.	0	N.W.	0	N.W.	1	24
25	4	-12	6	-2	.....	.....	.....	.....	.....	0	0	0	N.	0	S.W	2	W.	0	25
26	3	25	30	20	.....	.....	.....	.....	.....	0	5 C.	10 Cu.	N.	0	W.	0	N.	0	26
27	2	10	20	25	.....	.....	.....	.....	.....	0	5 C.	10 C. Cu.	N.E.	0	N. E.	0	W.	0	27
28	2	34	40	34	.....	5 a.m.	—	.....	.....	10 N.	10 N.	10 C. Cu.	N.E.	0	S. E.	0	N.	0	28
29	2	30	38	35	.....	—	—	.....	.....	10 N.	10 N.	10 N.	S. E.	0	E.	0	N. E.	0	29
30	3	27	34	33	.....	—	11 a.m.	.30	3.00	10 N.	5 Cu.	0	N.E.	0	S. W.	0	W.	0	30
31	4	28	20	18	.....	.....	.....	.....	.....	0	0	0	N.W.	0	W.	0	N.	0	31
Sums.		376	654	418	.....	.....	.....	2.65	19.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Mean.		.....	.....	.....	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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DATE.	BAROMETER.				HUMIDITY, DEW POINT, Etc.																	
	7 A. M.		2 P. M.	9 P. M.	7 A. M.						2 P. M.						9 P. M.					
	Observed reading.	Attached thermom'r.	Observed reading.	Observed reading.	Attached thermom'r.	Bar. cor'ted and reduced.	Dry-bulb thermom'r.	Wet-bulb thermom'r.	Dew point.	Tension of vapor.	Relative humidity.	Dry-bulb thermom'r.	Wet-bulb thermom'r.	Dew point.	Tension of vapor.	Relative humidity.	Dry-bulb thermom'r.	Wet bulb thermom'r.	Dew point.	Tension of vapor.	Relative humidity.
188.																						
1	28.75	35	28.83	29.00	36	.....	25	21	10	.130	52	35	30	20	.203	54	32	30	27	.180	80
2	29.15	34	29.15	29.15	38	.....	28	25	18	.153	67	36	34	31	.211	82	30	28	24	.166	79
3	29.15	36	29.15	29.05	36	.....	30	29	27	.166	89	38	37	36	.228	92	28	26	22	.153	78
4	29.00	38	28.90	28.80	38	.....	32	30	27	.130	80	42	40	38	.266	84	30	28	24	.166	79
5	28.70	36	28.60	28.40	40	.....	38	37	36	.228	92	42	40	36	.246	84	34	32	27	.195	81
6	28.30	38	28.30	28.35	38	.....	34	32	29	.195	81	40	38	32	.153	78	38	34	3	.065	79
7	28.40	24	28.45	28.55	15	.....	0	-1	-9	.045	69	5	4	-1	.057	76	-8	-10	-50	.031	18
8	28.60	18	28.05	28.75	18	.....	-3	-4	-11	.039	67	4	3	-2	.054	75	-2	-4	-22	.041	37
9	28.40	15	27.90	27.60	25	.....	3	1	-12	.052	48	14	12	5	.085	65	10	8	9	.071	96
10	27.70	20	28.25	28.58	25	.....	5	4	-1	.057	76	14	12	5	.085	65	8	8	7	.065	96
11	28.78	0	28.95	29.00	20	.....	5	4	-1	.057	76	12	12	2	.081	63	5	4	-1	.057	76
12	29.05	10	29.15	29.25	20	.....	-20	-21	-64	.016	24	-8	-9	-17	.031	59	-22	-23	-73	.015	21
13	29.25	12	29.30	29.35	20	.....	-17	-13	-34	.019	38	8	6	-4	.065	57	-5	-6	-14	.035	64
14	29.40	14	29.40	29.50	20	.....	-10	-11	22	.028	55	16	14	7	.092	68	-5	-6	-14	.033	64
15	29.32	18	29.30	29.15	20	.....	-10	-11	22	.028	55	14	13	10	.085	83	3	0	-20	.052	33
16	29.00	18	28.90	28.80	23	.....	7	6	-1	.012	78	20	18	12	.110	72	18	16	10	.101	70
17	28.75	25	28.65	28.50	25	.....	23	21	16	.124	74	29	26	20	.159	67	24	20	8	.130	50
18	28.80	20	28.85	28.90	20	.....	4	3	-2	.054	75	15	10	2	.088	57	0	-1	-7	.045	71
19	28.80	24	28.60	28.70	25	.....	8	6	-4	.065	74	22	20	16	.124	74	15	14	11	.088	83
20	28.90	25	29.00	29.10	24	.....	16	14	7	.092	68	20	20	18	.110	93	7	6	1	.062	78
21	28.95	38	28.70	28.70	32	.....	20	18	12	.110	72	32	32	30	.180	95	28	24	14	.153	56
22	28.75	32	28.70	28.60	40	.....	26	23	16	.141	65	34	32	29	.195	81	35	33	30	.203	81
23	28.80	20	28.95	29.05	20	.....	0	-1	-7	.045	71	6	4	-7	.059	54	-4	-6	-27	.037	31
24	29.10	22	29.10	29.20	15	.....	-10	-11	-22	.024	55	0	-1	-7	.047	71	-14	-16	-29	.023	46
25	29.10	18	29.10	29.10	20	.....	-12	-13	-25	.025	51	6	4	-7	.059	54	-2	-3	-10	.041	68
26	29.10	24	29.05	29.05	25	.....	25	24	22	.135	88	30	28	24	.166	79	20	15	-7	.110	30
27	29.00	25	28.90	28.80	30	.....	10	8	-1	.071	60	20	18	17	.110	72	25	20	4	.130	40
28	28.75	38	28.70	28.60	38	.....	34	32	29	.195	81	40	38	35	.246	84	34	32	29	.195	81
29	28.30	40	28.35	28.25	40	.....	30	28	24	.166	79	38	34	28	.228	66	35	34	32	.202	91
30	28.30	35	28.40	28.15	38	.....	27	25	21	.147	77	34	32	29	.187	81	33	32	30	.187	90
31	28.40	34	28.45	28.50	32	.....	28	26	22	.153	78	20	19	16	.110	86	18	16	10	.101	70
Sums	893.00	.....	892.68	893.248	.....	28.70	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mean	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

9

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METEOROLOGICAL RECORD FOR THE MONTH OF FEBRUARY, 1886.

Place of observation: Lunenburgh, County of Essex, State of Vermont; latitude 44° 27′ 48″; longitude 71° 40′ 47″; height above the sea, 1310 feet.

Day of Month.	Ozone on Scale of 10.	THERMOMETER IN THE OPEN AIR.				RAIN AND SNOW.				CLOUDS.			WINDS.						Day of Month.
		7 A.M.	2 P.M.	9 P.M.	MEAN.	Time of beginni'g of rain or snow.	Time of ending of rain or snow.	Total am't, rain and melted snow in inches.	Average depth of snow-fall in inches	7 A. M. Lower Clouds. Kind, Am't.	2 P. M. Lower Clouds. Kind, Am't.	9 P. M. Lower Clouds. Kind, Am't.	7 A. M. Direct'n	7 A. M. Force	2 P. M. Direct'n	2 P. M. Force.	9 P. M. Direct'n	9 P. M. Force	
1	4	18	12	0	.....	.....	.....	.....	.....	10 N.	5 Cu.	0	N.	0	W.	0	N.W.	0	1
2	4	-12	16	5	.....	.....	.....	.....	.....	0	0	0	N.W.	0	S.W.	0	N.	0	2
3	4	0	6	-5	.....	.....	.....	.....	.....	5 C.	0	0	N.	0	W.	0	W.	1	3
4	3	-12	-4	-14	.....	.....	.....	.....	.....	0	0	5 Cu.	W.	0	N.W.	0	N.W.	1	4
5	3	-24	-2	-13	.....	.....	.....	.....	.....	0	0	0	N.	0	W.	0	N.W.	1	5
6	3	-25	6	0	.....	.....	.....	.....	.....	0	0	0	N.W.	0	N.	0	W.	0	6
7	4	-5	25	15	.....	.....	.....	.....	.....	0	5 Cu.	0	N.	0	S.W.	0	W.	0	7
8	5	20	38	25	.....	.....	.....	.....	.....	0	0	0	W.	0	S.W.	0	N.	0	8
9	5	30	40	32	.....	.....	.....	.....	.....	0	0	0	S.W.	0	S.W.	0	S.W.	0	9
10	5	34	45	30	.....	.....	.....	.....	.....	0	0	0	N.	0	W.	0	N.E.	0	10
11	6	29	40	28	.....	9 P. M.	—	.....	.....	10 Cu.	10 Cu.	10 N.	E.	0	S.E.	0	N.E.	0	11
12	4	30	40	35	.....	—	10 P. M.	.10	.....	10 N.	10 Cu.	10 N.	N.E.	0	N.E.	0	N.E.	0	12
13	3	40	42	40	.....	.....	.....	.....	.....	10 Cu. s.	10 Cu.	10 Cu.	N.E.	0	N.E.	0	N.E.	2	13
14	4	39	46	42	.....	Shower.	8 P. M.	.25	.....	8 Cu.	10 Cu. n.	10 N.	N.E.	1	S.E.	0	E.	1	14
15	4	38	44	40	.....	.....	.....	.....	.....	10 C. Cu.	5 Cu.	10 N.	N.	0	S.E.	0	E.	0	15
16	4	25	28	15	.....	Snow	squalls.	.....	.....	10 N.	10 N.	5 Cu.	N.W.	2	W.	3	N.W.	4	16
17	5	10	24	16	.....	.....	.....	.....	.....	5 C.	0	0	S.W.	1	S.W.	0	W.	0	17
18	5	12	28	20	.....	.....	.....	.....	.....	0	0	0	N.W.	0	W.	0	N.	0	18
19	5	20	38	35	.....	9 P. M.	—	.....	.....	8 Cu.	10 Cu.	10 N.	N.E.	0	E.	0	S.W.	0	19
20	4	22	18	5	.....	—	6 P. M.	.50	5.00	10 N.	10 N.	10 Cu.	W.	0	W.	2	N.W	3	20
21	5	-5	12	3	.....	.....	.....	.....	.....	0	5 Cu.	0	N.	0	N.W.	0	W.	0	21
22	4	-5	15	0	.....	.....	.....	.....	.....	0	0	0	W.	0	W.	0	N.	0	22
23	5	-10	12	6	.....	.....	.....	.....	.....	0	0	0	N.	0	S.W.	0	W.	0	23
24	6	-6	16	10	.....	.....	.....	.....	.....	0	0	0	N.W.	0	W.	0	N.	0	24
25	6	10	26	32	.....	.....	1 P. M.	.....	.25	0	10	10	S.W.	1	S.W.	2	S.	4	25
26	6	32	18	0	.....	—	—	.....	.....	10	10	10	N.W.	3	N.W.	3	N.W.	3	26
27	5	-8	0	-3	.....	—	3 P. M.	80	8.00	10	10	0	N.W.	3	N.W.	3	N.W.	3	27
28	4	-5	7	0	.....	.....	.....	.....	.....	0	0	0	N.W.	2	N.W.	2	N.W.	1	28
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	30
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	31
Sums	.....	289	636	399	.....	.....	.....	1.65	13.25	.....	.....	.....	.....	.....	.....	.....	.....	.....	...
Mean	.....	.....	.....	.....	15.39	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...

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BAROMETER. ... HUMIDITY, DEW POINT, ETC.

DATE. 188	BAROMETER.						HUMIDITY, DEW POINT, ETC.																		Daily mean humidity.
	7 A. M.		2 P. M.		9 P. M.		7 A. M.					2 P. M.					9 P. M.							
	Observed reading.	Attached thermom'tr	Observed reading.	Attached thermom'tr	Observed reading.	Attached thermom'tr	Barometer corrected and reduc'd	Dry-bulb thermometer.	Wet-bulb thermometer.	Dew point.	Tension of vapor.	Relative humidity.	Dry-bulb thermometer.	Wet-bulb thermometer.	Dew point.	Tension of vapor.	Relative humidity.	Dry-bulb thermometer.	Wet-bulb thermometer.	Dew point.	Tension of vapor.	Relative humidity.		
1	28.60	32	28.60	30	28.65	20	....	18	17	14	.101	85	12	11	7	.078	81	0	-1	-7	.045	71	.....
2	28.75	15	28.80	28	28.85	15	....	-12	-14	-74	.023	12	16	15	12	.092	84	5	4	-1	.057	76	.....
3	28.95	14	29.00	22	28.95	19	....	0	2	-18	.045	42	6	5	0	.059	77	-5	-6	-14	.035	64	.....
4	28.95	18	28.90	20	28.85	16	....	-12	-14	-74	.025	12	-4	-5	-13	.037	65	-14	-13	-29	.023	46	.....
5	28.95	16	29.00	18	29.10	18	....	-24	-25	.....	.013	8	-2	-3	-10	.041	68	-13	-12	-27	.024	49	.....
6	29.05	20	29.00	30	28.90	24	....	-25	-26	.....	.013	8	6	5	0	.059	77	0	-1	-7	.045	71	.....
7	28.75	25	28.75	34	28.70	20	....	-5	-6	-14	.035	64	25	23	18	.135	76	15	11	11	.088	83	.....
8	28.65	30	28.60	40	28.65	29	....	20	19	16	.110	86	38	36	33	.228	83	25	24	22	.135	88	.....
9	28.75	35	28.85	48	29.00	40	....	30	29	27	.166	89	40	36	30	.246	68	32	30	27	.166	80	.....
10	29.25	38	29.30	48	29.40	36	....	34	33	31	.195	90	45	44	42	.298	89	30	29	27	.186	89	.....
11	29.45	40	29.40	49	29.35	42	....	29	28	26	.159	89	40	39	38	.246	92	28	27	25	.153	89	.....
12	29.05	39	29.00	45	28.75	40	....	30	28	24	.166	79	40	37	33	.246	77	35	33	30	.203	81	.....
13	28.45	45	28.30	48	28.20	42	....	40	38	35	.246	94	42	40	38	.266	84	40	39	36	.246	92	.....
14	28.50	45	28.60	52	28.50	48	....	39	38	37	.287	92	46	44	42	.310	85	42	40	38	.256	84	.....
15	28.40	45	28.40	50	28.30	45	....	38	36	33	.228	83	44	42	40	.288	85	42	40	36	.246	84	.....
16	28.40	35	28.50	40	28.75	32	....	35	24	22	.135	88	28	27	25	.153	89	15	14	11	.088	83	.....
17	28.90	25	28.95	35	29.00	26	....	10	9	5	.071	80	24	23	21	.130	87	16	14	7	.092	68	.....
18	28.90	28	28.90	32	28.85	28	....	12	11	6	.074	81	28	26	22	.153	78	20	19	16	.110	86	.....
19	28.75	30	28.50	48	28.40	40	....	20	19	16	.110	86	38	35	28	.228	66	35	33	30	.203	81	.....
20	28.10	35	28.20	25	28.40	20	....	22	20	16	.124	74	18	17	14	.101	85	5	6	-1	.057	76	.....
21	28.30	18	28.35	28	28.55	22	....	-5	-7	-30	.035	28	12	11	7	.078	81	2	2	-3	.052	74	.....
22	28.50	10	28.95	34	29.00	20	....	-5	-6	-14	.035	64	15	14	7	.088	83	3	-1	-7	.045	71	.....
23	29.05	12	29.05	29	29.10	15	....	-10	-11	-22	.028	55	12	11	7	.078	81	6	5	0	.059	77	.....
24	29.10	14	29.10	25	29.15	30	....	-6	-7	-15	.034	63	16	15	12	.092	84	10	9	5	.071	80	.....
25	29.00	25	28.75	32	28.25	32	....	10	9	5	.071	80	26	24	20	.041	76	32	30	28	.187	80	.....
26	27.90	32	27.95	33	28.10	30	....	32	31	29	.180	90	18	17	14	.101	85	0	1	-7	.045	71	.....
27	28.30	30	28.50	30	28.60	30	....	-8	-9	-19	.031	59	0	-1	-7	.045	71	-3	-4	11	.039	68	.....
28	28.65	24	28.70	31	28.75	30	....	-5	-6	-14	.035	64	7	6	1	.062	78	0	-1	-7	.045	71	.....
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sums	804.45	.....	804.30	.....	804.95	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	73
Mean	.....	.....	.....	.....	.....	.....	28.73	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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METEOROLOGICAL RECORD FOR THE MONTH OF MARCH, 1886.

Place of observation: Lunenburgh, County of Essex, State of Vermont; latitude, 44°, 27′ 43″; longitude, 71°, 40′ 47″; height above the sea, 1210 feet.

Day of Month.	Ozone on Scale of 10.	THERMOMETER IN THE OPEN AIR.				RAIN AND SNOW.				CLOUDS.			WINDS.						Day of Month.
		7 A.M.	2 P.M.	9 P.M.	MEAN	Time of begin'g of rain or snow.	Time of ending of rain or snow.	Total am't. rain and melted snow, in inches.	Av. depth of snow-fall in inches.	7 A. M. Lower Clouds. Kind, am't.	2. P. M. Lower Clouds. Kind, am't.	9 P. M. Lower Clouds. Kind, am't.	7 A. M. Direction	7 A. M. Force.	2 P. M. Direction	2 P. M. Force.	9 P. M. Direction	9 P. M. Force.	
1	5	-16	-3	-5	.....	.....	.....	.....	.....	0	0	0	N.W.	2	N.W.	2	N.W.	1	1
2	5	3	16	9	.....	.....	.....	.....	.....	0	0	0	N.W.	1	N.W.	2	N.W.	1	2
3	4	7	18	22	.....	.....	.....	.....	.....	0	0	8 Cu.	W.	1	N.W.	2	W.	0	3
4	4	18	28	14	.....	.....	.....	.....	.....	10 Cu.	0	0	N.W.	0	W.	1	N.W.	1	4
5	4	10	22	17	.....	.....	.....	.....	.....	0	0	0	N.	0	N.W.	1	N.	0	5
6	3	8	16	14	.....	.....	.....	.....	.....	0	0	0	N.W.	0	N.W.	1	N.W.	0	6
7	3	9	15	18	.....	.....	.....	.....	.....	0	0	0	N.W.	0	W.	0	N.W.	0	7
8	3	20	32	25	.....	.....	.....	.....	.....	0	0	0	N.W.	0	N.W.	0	N.	0	8
9	2	5	30	21	.....	.....	.....	.....	.....	0	0	0	N.W.	0	S.W.	0	W.	0	9
10	2	8	32	20	.....	.....	.....	.....	.....	0	0	0	N.	0	S.W.	0	N.	0	10
11	3	6	35	28	.....	.....	.....	.....	.....	0	0	0	N.W.	0	S.W.	0	W.	0	11
12	4	26	40	38	.....	.....	.....	.....	.....	6 Cu.	10 N.	10 N.	S.W.	1	S.W.	2	S.W.	2	12
13	5	36	40	39	.....	10 a.m.	10 p.m.	.20	2.00	10 N.	10 N.	10 N.	S.W.	2	S.W.	1	S.W.	1	13
14	6	22	40	28	.....	.....	.....	.....	.....	0	0	10 Cu.	N.W.	1	N.W.	1	W.	1	14
15	7	22	34	30	.....	.....	.....	.....	.....	0	10 Cu.	10 C. Cu.	N.	1	N.E.	1	N.E.	1	15
16	7	28	33	29	.....	sn'w sq'ls	.....	.....	.....	10 N.	10 N.	10 N.	N.	1	W.	0	N.W.	0	16
17	7	30	38	32	.....	sn'w sq'ls	.....	.....	.....	10 N.	5 C.	10 N.	W.	0	S.W.	1	N.W.	0	17
18	7	28	36	29	.....	.....	.....	.....	.....	0	0	10 C.	N.	0	W.	0	N.	0	18
19	6	10	40	26	.....	8 p m.	—	.....	.....	0	5 C.	10 N.	N.E.	0	W.	0	S.W.	0	19
20	6	20	34	28	.....	—	—	.....	.....	10 N.	10 Cu.	10 N.	N.E.	0	N.E.	1	S.E.	0	20
21	6	28	36	30	.....	—	2 p.m.	.50	5.00	10 N.	10 Cu.	8 Cu.	N.E.	0	S.E.	1	W.	0	21
22	6	29	38	28	.....	.....	.....	.....	.....	10 C. Cu.	8 C.	10 Cu.	N.	0	W.	1	N.	0	22
23	5	22	26	20	.....	11 a.m.	—	.....	.....	8 Cu.	10 N.	10 N.	N.W.	0	N.W.	1	W.	1	23
24	6	15	24	16	.....	—	10 a.m.	.10	1.00	10 N.	5 C.	0	N.W.	1	N.W.	2	N.W.	0	24
25	7	20	40	32	.....	.....	.....	.....	.....	0	0	8 Cu.	N.	0	S.W.	1	W.	0	25
26	8	18	38	30	.....	.....	.....	.....	.....	0	5 C.	0	N.W.	0	W.	0	W.	0	26
27	9	25	40	29	.....	.....	.....	.....	.....	0	0	0	N.	0	S.W.	1	N.	0	27
28	9	24	39	24	.....	.....	.....	.....	.....	0	0	0	W.	0	S.W.	1	N.W.	0	28
29	8	20	40	28	.....	9 p.m.	—	.....	.....	0	5 Cu.	10 N.	N.W.	0	S.	1	W.	0	29
30	8	30	40	35	.....	—	8 a.m.	.10	1.00	10 N.	10 Cu.	10 Cu.	N.	0	S.W.	0	S W.	0	30
31	8	38	49	50	.....	.....	.....	.....	.....	10 C. Cu.	10 Cu.	10 C. Cu.	S.W.	0	S.W.	0	W.	2	31
Sums.		569	993	784	.....	.....	.....	.90	9.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mean		.....	.....	.....	25.24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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DATE.	BAROMETER.					HUMIDITY, DEW POINT, Etc.																			
	7 A. M.		2 P. M.		9 P. M.		7 A. M.				2 P. M.				9 P. M.									
188 .	Observed reading.	Attached thermom'r.	Observed reading.	Attached thermom'r.	Observed reading.	Attached thermom'r.	Bar. cor'ted and reduced.	Dry-bulb thermom'r.	Wet-bulb thermom'r.	Dew point.	Tension of vapor.	Relative humidity.	Dry-bulb thermom'r.	Wet-bulb thermom'r.	Dew point.	Tension of vapor.	Relative humidity.	Dry-bulb thermom'r.	Wet-bulb thermom'r.	Dew point.	Tension of vapor.	Relative humidity.	Daily mean humidity.	
1	28.80	21	28.85	31	28.90	30	.....	-16	-15	-33	.020	41	-3	-2	-10	.041	68	-5	-6	-14	.035	64	....	
2	28.90	26	28.88	32	28.86	30	.....	3	2	-11	.039	67	16	15	12	.092	84	9	8	4	.068	79	....	
3	28.80	27	28.70	34	28.60	30	.....	7	5	-6	.062	56	18	17	15	.105	85	22	21	19	.119	86	....	
4	28.65	30	28.62	32	28.60	30	.....	18	17	14	.101	85	28	27	25	.153	89	14	13	10	.085	83	....	
5	28.58	20	28.55	30	28.50	33	.....	10	9	5	.071	80	22	21	19	.119	86	17	16	13	.096	84	....	
6	28.60	21	28.65	30	28.60	32	.....	8	7	3	.065	79	16	15	12	.092	84	14	15	10	.085	83	....	
7	28.62	32	28.60	32	28.55	32	.....	9	8	4	.068	79	15	14	11	.088	83	18	17	14	.101	85	....	
8	28.55	32	28.52	35	28.50	33	.....	20	19	16	.110	86	32	31	29	.180	90	25	24	22	.135	88	....	
9	28.65	30	28.70	34	28.75	32	.....	5	4	-1	.059	76	30	30	30	.166	100	21	20	18	.114	86	....	
10	28.75	28	28.75	36	28.70	30	.....	8	7	3	.065	79	32	31	29	.180	90	20	19	16	.110	86	....	
11	28.70	24	28.70	38	28.65	34	.....	6	5	0	.059	77	35	33	30	.203	81	28	26	22	.153	78	....	
12	28.45	34	28.35	36	28.30	40	.....	26	25	23	.141	88	40	37	35	.246	84	38	36	33	.228	83	....	
13	28.37	38	28.38	39	28.60	35	.....	36	35	34	.211	91	40	39	38	.246	92	39	39	39	.237	100	....	
14	28.70	33	28.72	35	28.75	32	.....	22	21	19	.119	86	40	38	35	.246	84	28	26	22	.153	78	....	
15	28.88	34	28.80	36	28.78	34	.....	22	21	19	.119	86	34	32	29	.195	81	30	28	24	.166	79	....	
16	28.60	33	28.75	38	28.85	36	.....	28	26	22	.153	78	38	32	30	.187	90	29	28	26	.159	89	....	
17	29.00	35	29.00	40	29.00	36	.....	30	28	24	.166	79	38	37	36	.228	92	32	31	29	.180	90	....	
18	29.00	36	28.90	39	28.95	36	.....	28	27	23	.153	80	36	33	28	.211	73	29	27	23	.159	78	....	
19	28.90	30	28.85	45	28.75	39	.....	10	9	5	.071	80	40	38	35	.246	84	26	24	20	.141	76	....	
20	28.70	34	28.70	40	28.70	36	.....	20	19	16	.110	86	34	32	29	.195	81	28	27	25	.153	89	....	
21	28.35	36	28.30	42	28.30	40	.....	28	27	25	.153	89	36	34	31	.211	82	30	28	24	.166	79	....	
22	28.10	35	28.05	45	28.15	36	.....	29	28	26	.159	89	38	36	33	.228	83	28	27	25	.153	89	....	
23	28.20	32	28.30	40	28.40	38	.....	28	27	25	.159	89	36	34	32	.211	82	28	27	26	.159	89	....	
24	28.55	30	28.65	34	28.80	28	.....	15	14	11	.088	83	24	23	21	.130	87	20	19	16	.110	86	....	
25	28.80	30	28.75	40	28.65	24	.....	20	19	16	.110	86	40	37	35	.246	84	32	31	29	.180	90	....	
26	28.70	34	28.80	38	28.85	32	.....	18	17	14	.101	85	38	37	36	.228	92	30	29	27	.166	89	....	
27	28.90	30	29.00	42	29.00	35	.....	25	23	18	.135	76	40	38	35	.246	84	29	28	27	.166	89	....	
28	29.00	35	29.10	40	29.25	30	.....	24	23	21	.130	87	39	37	34	.237	83	24	23	21	.130	87	....	
29	29.20	30	29.10	45	29.05	32	.....	20	19	16	.110	86	40	37	33	.246	74	28	26	22	.153	78	....	
30	28.95	36	28.85	49	28.90	38	.....	30	29	27	.166	89	40	38	35	.246	84	35	32	24	.203	64	....	
31	28.80	45	28.70	54	28.70	38	.....	38	36	33	.228	83	49	45	41	.347	73	50	47	42	.306	74	....	
Sums	889.75	.....	889.62	.....	.....	.....	28.59	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Mean	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	82

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METEOROLOGICAL RECORD FOR THE MONTH OF APRIL, 1886.

Place of observation: Lunenburgh, County of Essex, State of Vermont; latitude 44° 27′ 48″; longitude 71° 40′ 47″; height of above the sea 1210 feet.

Day of Month.	Ozone on Scale of 10.	THERMOMETER IN THE OPEN AIR. 7 A.M.	2 P.M.	9 P.M.	MEAN	RAIN AND SNOW. Time of beginning of rain or snow.	Time of ending of rain or snow.	Total amt., rain and melted snow in inches.	Average depth of snow-fall in inches.	CLOUDS. 7 A. M. Lower Clouds. Kind, am't.	2 P. M. Lower Clouds. Kind, am't.	9 P. M. Lower Clouds. Kind, am't.	WINDS. 7 A. M. Direction	Force	9 P. M. Direction	Force	2 P. M. Direction	Force	Day of Month.
1	8	45	50	40	.....	Showers.	.....	.....	.....	10 N.	5 Cu.	8 Cu.	W.	1	S.W.	2	W.	0	1
2	8	34	45	30	.....	.....	.....	.....	.....	0	5 Cu.	10 C. Cu.	N.W.	0	W.	1	N.W.	1	2
3	7	30	36	30	.....	.....	.....	.....	.....	0	0	0	N.W.	1	N.W.	1	W.	0	3
4	7	28	37	29	.....	.....	.....	.....	.....	0	0	0	N.	0	W.	1	W.	0	4
5	7	30	40	34	.....	.....	.....	.....	.....	0	0	5 Cu.	W.	0	S.W.	0	N.	0	5
6	7	29	42	32	.....	10 A. M.	—	.10	.....	8 Cu.	10 N.	10 N.	N.E.	0	N.E.	1	E.	0	6
7	7	28	35	30	.....	—	—	.....	.....	8 Cu.	10 N.	10 N.	N.E.	1	N.	1	W.	3	7
8	6	29	34	29	.....	—	2 P. M.	.40	4.00	10 N.	10 N.	10 Cu.	N.W.	0	W.	1	N.W.	0	8
9	6	30	55	40	.....	.....	.....	.....	.....	0	0	5 C.	N.W.	0	S.W.	0	W.	1	9
10	6	34	42	30	.....	.....	.....	.....	.....	10 Cu.	10 C Cu.	0	N.	0	W.	1	N.W.	0	10
11	6	32	47	34	.....	.....	.....	.....	.....	0	0	0	W.	0	S.W.	0	W.	0	11
12	5	36	15	40	.....	.....	.....	.....	.....	10 Cu.	8 Cu.	5 C	N.	0	S.W.	0	N.W.	0	12
13	5	39	55	45	.....	Showers.	.....	.....	.....	10 Cu. S.	10 N.	8 Cu.	W.	0	S.W.	0	S.W.	0	13
14	5	40	58	43	.....	.....	.....	.....	.....	0	0	0	N.W.	0	N.	0	S.W.	0	14
15	5	50	64	45	.....	.....	.....	.....	.....	0	0	0	S.W.	0	S.W.	0	W.	0	15
16	4	40	59	40	.....	.....	.....	.....	.....	10 Cu.	0	0	N.	0	W.	0	N.W.	0	16
17	4	48	67	48	.....	.....	.....	.....	.....	0	0	0	W.	0	S.W.	1	W.	0	17
18	4	50	70	56	.....	.....	.....	.....	.....	0	2 Cu.	0	W.	0	S.W.	0	W.	0	18
19	3	46	65	50	.....	.....	.....	.....	.....	0	8 Cu.	5 C.	N.	0	W.	0	N.	0	19
20	6	50	72	54	.....	.....	.....	.....	.....	0	0	0	W.	0	S.W.	0	S.W.	0	20
21	8	52	70	52	.....	.....	.....	.....	.....	0	0	5 C.	N.	0	W.	1	W.	0	21
22	8	33	72	55	.....	.....	.....	.....	.....	0	0	0	S.W.	0	S.W.	0	N.W.	0	22
23	8	55	75	64	.....	.....	.....	.....	.....	0	5 Cu.	8 Cu.	N.	0	S.W.	0	W.	0	23
24	7	40	58	38	.....	.....	.....	.....	.....	10 Cu.	5 Cu.	0	N.W.	0	W.	1	N.W.	0	24
25	4	42	59	40	.....	.....	.....	.....	.....	0	0	0	N.	0	W.	0	N.W.	0	25
26	3	35	66	42	.....	.....	.....	.....	.....	0	0	0	N.	0	S.W.	0	N.W.	0	26
27	5	36	55	40	.....	Showers.	.....	.....	.....	5 Cu.	10 Cu.	10 N.	W.	0	S.W.	0	N.E.	0	27
28	6	35	54	44	.....	Showers.	.....	.25	.....	0	10 N.	5 C.	N.E.	0	W.	0	W.	0	28
29	6	39	58	42	.....	.....	.....	.....	.....	0	0	0	N.W.	0	N.W.	0	N.	0	29
30	6	40	60	56	.....	.....	.....	.....	.....	0	0	0	N.W.	0	W.	0	W.	0	30
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	31
Sums	.....	1175	1631	1242	.....	.....	.....	.75	4.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	...
Mean	.....	.....	.....	.....	44.08	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...

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HUMIDITY, DEW POINT, ETC.

DATE. 188	BAROMEMER. 7 A. M. Observed reading.	7 A. M. Attached thermometer.	2 P. M. Observed reading.	2 P. M. Attached thermometer.	9 P. M. Observed reading.	9 P. M. Attached thermometer.	Barometer corrected and reduced.	7 A. M. Dry-bulb thermometer.	7 A. M. Wet-bulb thermometer.	7 A. M. Dew Point.	7 A. M. Tension of vapor.	7 A. M. Relative humidity.	2 P. M. Dry-bulb thermometer.	2 P. M. Wet-bulb thermometer.	2 P. M. Dew Point.	2 P. M. Tension of vapor.	2 P. M. Relative humidity.	9 P. M. Dry-bulb thermometer.	9 P. M. Wet-bulb thermometer.	9 P. M. Dew Point.	9 P. M. Tension of vapor.	9 P. M. Relative humidity.	Daily mean humidity.
1	28.50	49	28.45	52	28.50	48	.....	45	41	36	.298	71	50	45	40	.360	68	40	37	33	.246	76	.....
2	28.60	48	28.70	50	28.80	40	.....	34	32	17	.130	75	45	42	36	.298	71	30	29	27	.166	89	.....
3	28.85	38	28.90	42	28.95	40	.....	30	28	24	.166	79	36	32	25	.211	64	30	28	24	.159	79	.....
4	28.95	35	28.95	44	28.95	44	.....	28	27	25	.153	89	37	33	26	.219	65	29	28	26	.159	89	.....
5	29.00	38	29.00	48	29.05	42	.....	30	28	24	.166	79	40	36	30	.246	68	34	32	29	.195	81	.....
6	28.85	36	28.65	50	28.55	40	.....	29	28	26	.159	89	42	38	33	.266	69	32	31	30	.187	90	.....
7	28.55	35	28.65	40	28.70	42	.....	28	27	25	.153	89	35	32	29	.203	72	30	29	27	.166	89	.....
8	28.75	34	28.80	42	28.90	40	.....	29	28	26	.159	89	34	32	29	.195	81	29	28	26	.159	89	.....
9	28.90	38	28.90	38	28.95	50	.....	30	29	27	.166	89	55	50	47	.432	70	40	36	30	.246	68	.....
10	28.85	44	28.90	49	29.10	40	.....	34	32	29	.195	81	42	38	33	.266	69	30	28	24	.166	79	.....
11	29.15	40	29.25	50	29.30	45	.....	32	32	28	.180	100	47	44	41	.322	79	34	32	29	.159	81	.....
12	29.25	48	29.20	55	29.10	49	.....	36	33	28	.211	73	51	47	43	.373	74	40	38	35	.246	84	.....
13	29.00	50	29.00	60	29.00	54	.....	39	36	29	.237	69	55	50	47	.432	70	45	42	39	.298	78	.....
14	29.05	50	29.10	62	29.10	50	.....	40	38	35	.246	84	58	50	47	.481	67	43	40	36	.277	77	.....
15	29.15	52	29.30	66	29.20	55	.....	50	45	40	.306	68	64	60	57	.595	79	45	43	41	.298	85	.....
16	29.30	45	29.30	55	29.30	50	.....	49	37	30	.246	68	59	52	48	.499	67	40	38	35	.246	84	.....
17	29.30	52	29.30	66	29.30	54	.....	48	44	40	.334	73	67	62	59	.661	76	48	44	40	.334	73	.....
18	29.28	58	29.20	71	29.20	58	.....	50	44	37	.306	61	70	67	62	.732	86	56	54	53	.448	88	.....
19	29.20	54	29.20	65	29.15	55	.....	46	40	32	.310	58	65	60	57	.616	75	50	43	37	.306	61	.....
20	29.10	58	29.10	70	29.00	60	.....	50	45	43	.306	68	72	65	63	.783	73	54	50	46	.417	76	.....
21	29.05	55	29.00	68	29.00	60	.....	52	50	48	.387	87	70	64	61	.732	72	52	49	44	.387	75	.....
22	28.95	56	28.90	70	28.95	62	.....	33	32	30	.187	90	72	66	52	.555	69	51	50	46	.432	70	.....
23	28.85	58	28.75	72	28.65	64	.....	55	51	48	.432	76	75	70	68	.866	78	64	60	57	.595	79	.....
24	28.70	55	28.80	60	28.85	52	.....	42	40	34	.246	52	58	54	51	.481	78	38	32	21	.228	50	.....
25	28.90	50	28.90	59	28.90	44	.....	40	40	38	.266	84	59	54	50	.499	72	40	36	30	.246	68	.....
26	28.90	48	28.85	62	28.80	46	.....	35	32	27	.203	72	56	50	44	.448	65	42	39	35	.266	77	.....
27	28.75	46	28.70	58	28.65	48	.....	36	32	25	.211	64	55	50	46	.432	70	40	38	35	.246	84	.....
28	28.70	45	28.80	58	28.85	48	.....	35	32	27	.203	72	54	50	46	.417	76	44	41	37	.288	78	.....
29	28.85	48	28.85	60	28.80	50	.....	39	35	32	.237	75	58	51	47	.481	67	42	40	38	.266	84	.....
30	28.85	45	28.85	59	28.90	52	.....	40	36	30	.246	68	60	50	50	.517	70	56	50	44	.448	65	.....
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sums	867.88	.....	868.13	.....	868.50	.....	28.04	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mea	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	74

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METEOROLOGICAL RECORD FOR THE MONTH OF MAY, 1886.

Place of observation: Lunenburgh, County of Essex, State of Vermont; latitude, 44°, 27′ 48″; longitude, 71°, 40′ 47″; height above the sea, 1210 feet.

Day of Month.	Scale of 10 Ozone.	THERMOMETER IN THE OPEN AIR.				RAIN AND SNOW.				CLOUDS.			WINDS.						Day of Month.
		7 A.M.	2 P.M.	9 P.M.	MEAN	Time of begin'g of rain or snow.	Time of ending of rain or snow.	Total amt. rain and melted snow in inches.	Av. depth of snowfall in inches.	7 A. M. Lower Clouds.	2 P. M. Lower Clouds.	9 P. M. Lower Clouds.	7 A.M.		2 P.M.		9 P.M.		
										Kind, am't.	Kind, am't.	Kind, am't.	Direction	Force.	Direction	Force.	Direction	Force.	
1	8	55	70	54	.....	.....	.....	.....	.....	0	0	0	W.	0	S. W.	0	N.	0	1
2	8	50	71	52	.....	.....	.....	.....	.....	0	0	0	N.	0	S.W.	0	W.	0	2
3	8	49	68	50	.....	.....	.....	.....	.....	0	5 Cu.	2 C.	W.	0	S.	0	W.	0	3
4	8	48	70	55	.....	.....	.....	.....	.....	0	10 C. Cu.	8 Cu.	N.	0	S.W.	1	W.	2	4
5	9	49	65	52	.....	.....	.....	.....	.....	5 C.	8 Cu.	5 C.	N.W.	0	W.	1	W.	1	5
6	9	45	62	47	.....	.....	.....	.....	.....	10 Cu.	8 Cu.	5 C.	N.	0	W	0	N.W.	0	6
7	10	44	60	45	.....	.....	.....	.....	.....	8 Cu.	5 C.	0	W.	0	S.W.	0	W.	0	7
8	10	46	62	44	.....	.....	.....	.....	.....	10 N.	10 N.	10 Cu.	N.E.	0	N. E	0	N.	0	8
9	10	45	58	45	.....	9 a.m.	10 p m.	25	.....	8 Cu.	5 C.	0	N	1	N.	1	N.W.	0	9
10	9	40	60	42	.....	.....	.....	.....	.....	0	0	0	N.W.	0	W.	0	N.	0	10
11	9	42	57	48	.....	showers.	.....	.....	.....	10 N.	8 Cu.	5 C.	N.E.	0	W.	1	N.W.	0	11
12	9	45	60	50	.....	showers.	8 p.m.	30	.....	0	5 C.	10 N.	W.	0	S.W.	0	W.	0	12
13	9	50	61	56	.....	.....	.....	.....	.....	0	0	0	N.	0	S.W.	0	S.W.	0	13
14	8	52	68	50	.....	.....	.....	.....	.....	0	0	5 C.	W.	0	W.	0	N.	0	14
15	8	49	64	48	.....	9 p.m.	—	.....	.....	10 Cu. s.	8 Cu.	10 N.	N.E.	0	S.W.	0	W.	0	15
16	8	45	60	46	.....	—	11 a.m.	.25	.....	10 N.	10 C. Cu.	5 C.	N.E	0	S. E.	0	N.W.	0	16
17	6	42	54	44	.....	.....	.....	.....	.....	10 Cu.	8 Cu.	0	N.W.	0	N.W.	1	W.	0	17
18	6	44	60	48	.....	.....	.....	.....	.....	0	0	0	N.	0	W.	1	N.	0	18
19	7	50	68	58	.....	.....	.....	.....	.....	5 Cu.	0	0	W.	0	S.W.	0	W.	0	19
20	7	48	65	54	.....	showers.	.....	.07	.....	0	10 N.	0	N.E	0	S. E.	0	N.	0	20
21	7	46	62	48	.....	.....	.....	.....	.....	0	5 C.	0	N.	0	W.	0	W.	0	21
22	8	49	66	52	.....	.....	.....	.....	.....	10 N.	8 Cu.	0	W.	0	S.W.	0	W.	0	22
23	8	52	68	55	.....	.....	.....	.....	.....	0	0	5 C.	N.W.	0	S.W.	1	N.	0	23
24	6	54	68	50	.....	6 p.m.	—	.....	.....	0	5 C	10 N.	N.E.	0	S. E.	0	W.	0	24
25	4	46	60	48	.....	—	—	.....	.....	10 N.	10 N.	10 N.	N.E.	0	E.	0	N. E.	0	25
26	4	41	50	40	.....	—	night.	-1.20	.....	10 N.	10 N.	10 N.	N.E.	0	W.	0	N.W.	1	26
27	3	40	52	39	.....	shower.	.....	30	.....	10 Cu.	10 N.	10 Cu.	W.	0	S.W.	0	W.	0	27
28	5	42	60	40	.....	.....	.....	.....	.....	10 Cu.	8 Cu.	5 C.	S E.	0	W.	0	N.	0	28
29	5	40	70	60	.....	.....	.....	.....	.....	0	0	0	W.	0	S. W	0	W.	0	29
30	5	48	72	56	.....	.....	.....	.....	.....	0	0	0	N.	0	S. W.	0	N.W.	0	30
31	6	55	76	52	.....	.....	.....	—	.....	0	0	0	N.W.	0	S. W.	0	W.	0	31
Sums.		1450	1971	1530	.....	.....	.....	2.37	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Mean		.....	.....	.....	5526	.....	.....	.....	.....				.....	.....	.....	.....	.....	.....	

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7

DATE.	BAROMETER.					HUMIDITY, DEW POINT, Etc.																
	7 A. M.		2 P. M.	9 P. M.		7 A. M.					2 P. M.					9 P. M.						
1886	Observed reading.	Attached thermom'r.	Observed reading.	Attached thermom'r.	Observed reading.	Attached thermom'r.	Bar. cor'ted and reduced.	Dry-bulb thermom'r.	Wet-bulb thermom'r.	Dew point.	Tension of vapor.	Relative humidity.	Dry-bulb thermom'r.	Wet-bulb thermom'r.	Dew point.	Tension of vapor.	Relative humidity.	Dry-bulb thermom'r.	Wet bulb thermom'r.	Dew point.	Tension of vapor.	Relative humidity.	Daily mean humidity.
1	28.85	52	28.80	63	28.80	56	....	55	50	46	.432	70	70	64	61	.732	72	54	50	46	.417	76	....
2	28.80	50	28.80	70	28.80	58	.....	50	45	40	.360	68	71	65	62	.757	72	52	48	44	.387	75	....
3	28.80	52	28.80	69	28.80	55	.....	49	44	38	.347	67	68	63	60	.684	76	50	46	42	.360	74	....
4	28.80	50	28.70	66	28.70	54	.....	48	44	40	.334	73	70	64	61	.732	72	55	51	48	.432	76	....
5	28.80	49	28.70	59	28.70	56	.....	49	47	45	.347	86	73	64	61	.616	80	55	48	44	.367	75	....
6	28.75	46	28.80	62	28.80	50	.....	45	40	33	.298	64	66	58	53	.555	69	47	42	36	.322	66	....
7	28.80	45	28.80	66	28.85	49	.....	44	40	35	.288	70	60	56	51	.517	73	45	40	33	.298	64	....
8	28.75	48	28.70	62	28.65	50	....	46	41	35	.310	66	62	56	52	.555	69	44	40	35	.288	70	....
9	28.65	50	28.70	59	28.75	51	....	45	44	43	.298	92	58	56	55	.431	89	45	40	33	.298	64	....
10	28.80	50	28.85	62	28.90	52	.....	40	36	30	.246	68	60	54	49	.517	68	42	38	33	.266	69	....
11	28.85	48	28.85	62	28.85	50	.....	42	38	33	.266	69	57	51	46	.465	66	48	42	35	.334	69	....
12	28.80	52	28.80	62	28.80	53	.....	45	40	33	.298	64	60	58	57	.517	89	50	50	50	.360	100	....
13	28.80	54	28.85	69	28.85	57	.....	50	45	40	.360	68	65	60	57	.616	75	56	51	47	.448	71	....
14	28.85	55	28.75	68	28.80	52	.....	52	50	48	.387	87	68	65	63	.684	85	50	47	44	.360	80	....
15	28.80	54	28.75	65	28.70	55	.....	49	45	41	.347	73	64	60	57	.595	79	48	43	36	.334	63	....
16	28.70	50	28.75	62	28.80	48	.....	45	40	33	.298	64	60	54	49	.517	68	46	41	35	.310	66	....
17	28.85	48	28.95	56	29.00	46	.....	42	39	35	.266	77	54	50	46	.417	76	44	41	37	.288	78	....
18	29.05	49	29.05	58	29.10	52	.....	44	42	40	.360	85	60	55	51	.517	73	48	44	40	.334	73	....
19	29.10	54	29.05	66	29.00	55	.....	50	45	40	.334	68	68	62	58	.684	71	58	54	51	.481	78	....
20	28.80	52	28.60	65	28.65	58	.....	48	44	40	.334	73	65	60	56	.616	72	54	50	46	.417	76	....
21	28.70	50	28.75	64	28.80	50	.....	46	41	35	.310	66	62	58	55	.555	79	48	44	40	.334	73	....
22	28.60	52	28.65	66	28.70	54	.....	49	44	38	.347	67	66	60	56	.638	71	52	48	44	.387	75	....
23	28.70	55	28.70	69	28.70	58	.....	52	48	44	.387	75	68	64	62	.684	81	55	52	50	.432	82	....
24	28.65	54	28.60	68	28.55	59	.....	54	50	46	.417	76	68	64	62	.684	81	50	45	40	.360	68	....
25	28.55	46	28.50	65	28.40	52	.....	46	43	40	.310	79	60	55	51	.517	73	48	44	40	.334	73	....
26	28.50	42	28.50	60	28.45	46	.....	41	37	31	.256	68	50	45	40	.360	68	40	37	33	.240	76	....
27	28.50	40	28.50	58	28.50	44	.....	40	36	30	.246	68	52	48	44	.387	75	39	36	32	.237	75	....
28	28.55	44	28.60	60	28.65	50	.....	44	38	33	.266	69	60	58	57	.517	89	40	35	27	.246	59	....
29	28.70	46	28.70	68	28.70	62	.....	40	36	30	.246	68	70	64	61	.732	72	60	55	55	.517	73	....
30	28.70	50	28.70	72	28.70	65	.....	48	44	40	.334	73	72	68	66	.783	82	58	52	47	.481	67	....
31	28.80	64	28.80	74	28.85	60	.....	55	50	46	.432	70	75	70	67	.896	74	52	48	44	.387	75	....
Sums	891.35	.....	891.15	.....	891.30	.....	28.75	1450	.....	.....	.....	.....	1971	.....	.....	.....	.....	1530	.....	.....	.....	.....	.....
Mean	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	73

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METEOROLOGICAL RECORD FOR THE MONTH OF JUNE, 1886.

Place of observation: Lunenburgh, County of Essex, State of Vermont; latitude 44° 27′ 43″; longitude 71° 40′ 47″; height of above the sea 1210 feet.

Day of Month.	Ozone on Scale of 10.	THERMOMETER IN THE OPEN AIR.				RAIN AND SNOW.				CLOUDS.			WINDS.						Day of Month.
		7 A.M.	2 P.M.	9 P.M.	MEAN	Time of beginni'g of rain or snow.	Time of ending of rain or snow.	Total amt., rain and melted snow in inches.	Average depth of snow-fall in inches.	7 A. M. Lower Clouds. Kind, am't.	2 P. M. Lower Clouds. Kind, am't.	9 P. M. Lower Clouds. Kind, am't.	7 A. M. Direction	7 A. M. Force	2 P. M. Direction	2 P. M. Force	9 P. M. Direction	9 P. M. Force	
1	6	56	72	55	.....	.....	.....	.....	.....	0	0	0	W.	0	S.W.	0	W.	0	1
2	6	60	70	58	.....	9 P. M.	1 P. M.	.45	.....	0	5 C.	8 Cu.	S.W.	0	S.W.	1	W.	0	2
3	6	62	68	51	.....	.....	.....	.....	.....	10 N.	10 N.	5 Cu.	N.E.	0	S.E.	1	N.	0	3
4	6	58	62	48	.....	.....	.....	.....	.....	0	0	0	N.W.	0	W.	1	W.	1	4
5	6	46	74	58	.....	.....	.....	.....	.....	0	0	0	N.W.	1	S.W.	0	W.	0	5
6	6	52	78	56	.....	.....	.....	.....	.....	0	0	0	N.	0	S.	0	S.W.	0	6
7	6	58	78	61	.....	.....	.....	.....	.....	0	4 Cu.	5 Cu.	W.	0	S.	3	S.W.	2	7
8	6	54	74	55	.....	Shower.	4 A. M.	.20	.....	10 N.	5 C.	0	N.W.	1	W.	0	N.W.	0	8
9	6	50	70	52	.....	.....	.....	.....	.....	0	5 C.	5 Cu,	N.	0	W.	1	N.	0	9
10	5	55	68	58	.....	.....	.....	.....	.....	8 Cu.	5 C.	5 C.	N.W.	0	N.	0	N.	0	10
11	5	60	72	60	.....	.....	.....	.....	.....	0	0	0	N.	0	S.W.	0	W.	0	11
12	5	50	69	55	.....	.....	.....	.....	.....	0	0	0	N.W.	0	W.	0	N.W.	0	12
13	5	52	65	54	.....	6 A. M.	—	.20	.....	10 N.	10 N.	10 Cu.	N.E.	0	S.W.	0	W	0	13
14	5	50	60	52	.....	—	—	.....	.....	10 Cu. s.	10 C. Cu.	10 N.	S.E.	0	S.E.	0	N.E.	0	14
15	5	55	69	60	.....	—	8 A. M.	.45	.....	10 N.	10 Cu.	10 C.	N.E.	0	E.	0	N.	0	15
16	5	60	72	68	.....	.....	.....	.....	.....	10 Cu.	8 C.	5 C.	W.	0	S.W.	0	W.	0	16
17	6	62	75	70	.....	.....	.....	.....	.....	10 C. cu.	5 Cu.	10 Cu.	S W.	0	S.W.	0	S.E.	1	17
18	6	52	60	48	.....	.....	.....	.....	.....	5 Cu.	5 C.	0	W.	2	N.W.	1	N.W.	0	18
19	6	40	66	50	.....	.....	.....	.....	.....	0	0	0	N	0	W.	1	N.W.	0	19
20	7	48	76	55	.....	.....	.....	.....	.....	0	0	0	N.W.	0	S.W.	1	N.	0	20
21	7	52	77	64	.....	.....	.....	.....	.....	0	0	0	W.	0	S.W.	0	W.	0	21
22	7	60	78	69	.....	.....	.....	.....	.....	5 Cu.	2 C.	5 Cu.	N.	0	W.	0	W.	0	22
23	8	59	76	68	.....	.....	.....	.....	.....	5 C.	5 Cu.	10 Cu.	N W.	0	W.	0	N.	0	23
24	8	60	72	66	.....	.....	.....	.....	.....	10 Cu.	8 C. Cu.	10 Cu.	N.E.	0	S.E.	0	W.	0	24
25	8	62	70	64	.....	Showers.	.....	.....	.....	10 Cu. s.	5 Cu.	10 N.	N.E.	0	S.W.	0	W.	0	25
26	8	60	70	62	.....	8 P. M.	9 A. M.	.35	.....	10 Cu. s.	10 C. Cu.	10 N.	W.	0	W.	0	W.	0	26
27	7	50	59	50	.....	.....	.....	.....	.....	10 C. Cu.	10 Cu.	10 Cu.	N.W.	0	N.W.	0	N.	0	27
28	6	48	60	52	.....	.....	.....	.....	.....	0	5 C.	8 Cu.	E.	0	S.E.	1	W.	0	28
29	7	54	62	52	.....	Shower.	4 P. M.	.05	.....	0	10 N.	10 Cu.	N.E.	1	N.	0	N.W.	1	29
30	7	52	66	55	.....	.....	.....	.....	.....	0	0	0	N.W.	0	W.	2	N.	0	30
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	31
Sums	.....	1637	2076	1736	.....	.....	.....	1.70	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...
Mean	.....	.....	.....	.....	64.80	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...

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DATE.	BAROMETER.					HUMIDITY, DEW POINT, ETC.																				
	7 A. M.		2 P. M.		9 P. M.		7 A. M.						2 P. M.						9 P. M.						
1886.	Observed reading.	Attached thermom'tr	Observed reading.	Attached thermom'tr	Observed reading.	Attached thermom'tr	Barometer corrected and reduc'd	Dry-bulb thermometer.	Wet-bulb thermometer.	Dew point	Tension of vapor.	Relative humidity.	Dry-bulb thermometer.	Wet-bulb thermometer.	Dew point.	Tension of vapor.	Relative humidity.	Dry-bulb thermometer.	Wet-bulb thermometer.	Dew point	Tension of vapor.	Relative humidity.	Daily mean humidity.			
1	28.85	60	28.95	70	28.95	55	.....	56	52	49	.448	77	72	66	63	.783	73	55	51	48	.432	76	.....			
2	28.90	62	28.80	70	28.70	65	.....	60	55	51	.517	73	70	68	67	.738	90	58	56	55	.481	89	.....			
3	28.80	65	28.70	69	28.80	63	.....	62	58	55	.555	79	68	65	63	.684	85	51	45	38	.373	69	.....			
4	28.80	60	28.85	66	28.90	50	.....	58	52	47	.481	67	62	56	52	.555	69	48	42	35	.334	60	.....			
5	28.90	52	28.90	70	28.90	54	.....	56	41	35	.310	66	74	68	65	.838	74	58	53	49	.481	72	.....			
6	28.95	56	28.95	76	29.00	58	.....	52	48	44	.387	75	78	72	68	.957	75	56	50	44	.448	65	.....			
7	29.00	60	28.80	75	28.79	60	.....	58	52	47	.481	67	76	70	67	.896	74	61	55	49	.417	68	.....			
8	28.75	54	28.85	70	28.90	56	.....	54	50	46	.417	76	74	68	65	.838	74	55	50	46	.432	70	.....			
9	28.80	68	28.70	68	28.65	58	.....	59	46	42	.360	74	70	63	59	.732	77	58	48	44	.387	75	.....			
10	28.60	55	28.60	67	28.60	60	.....	55	46	42	.432	70	68	68	66	.784	82	60	54	55	.481	89	.....			
11	28.70	66	28.80	69	28.90	60	.....	60	58	57	.517	89	72	68	63	.707	81	55	54	57	.517	89	.....			
12	29.00	60	29.00	65	29.00	59	.....	59	52	48	.360	74	69	65	60	.616	85	55	52	50	.432	82	.....			
13	29.00	58	28.95	66	28.95	56	.....	52	50	48	.387	87	66	62	60	.616	85	54	53	50	.417	88	.....			
14	28.95	56	28.95	60	28.95	55	.....	50	48	46	.360	87	69	65	62	.707	81	49	49	46	.387	81	.....			
15	28.90	55	28.85	66	28.80	62	.....	55	51	48	.432	76	72	70	68	.783	91	60	58	57	.517	89	.....			
16	28.75	65	28.70	75	28.60	70	.....	60	60	60	.517	100	75	70	68	.866	78	68	66	65	.684	90	.....			
17	28.50	60	28.40	78	28.30	69	.....	62	52	48	.355	79	75	60	55	.517	73	72	68	64	.732	81	.....			
18	28.55	60	28.60	65	28.65	50	.....	58	48	41	.387	75	66	60	56	.638	71	48	42	35	.334	60	.....			
19	28.85	58	28.95	64	29.00	52	.....	48	40	33	.246	76	76	72	70	.896	82	55	51	48	.432	76	.....			
20	29.05	60	29.05	72	29.05	58	.....	52	50	44	.334	73	77	71	68	.926	74	64	61	59	.595	85	.....			
21	29.10	62	29.10	76	29.10	65	.....	60	52	48	.387	87	78	74	73	.783	73	69	65	63	.707	81	.....			
22	29.10	65	29.05	78	29.05	70	.....	62	54	49	.417	87	78	74	73	.890	85	68	64	63	.684	81	.....			
23	28.95	66	28.90	76	28.85	69	.....	59	55	52	.499	78	76	75	75	.985	95	66	64	66	.661	95	.....			
24	28.85	68	28.85	70	28.85	70	.....	60	58	57	.517	89	72	68	66	.783	82	64	65	65	.595	85	.....			
25	28.80	65	28.80	72	28.75	65	.....	62	58	55	.555	79	70	64	61	.732	72	64	61	59	.595	85	.....			
26	28.65	58	28.55	68	28.55	66	.....	58	58	57	.517	89	70	65	62	.732	77	62	62	62	.555	100	.....			
27	28.65	58	28.70	62	28.50	55	.....	50	50	50	.360	100	59	57	56	.499	89	59	50	50	.360	100	.....			
28	28.85	55	28.80	65	28.80	58	.....	58	48	46	.334	93	60	55	51	.517	73	52	46	40	.387	63	.....			
29	28.70	58	28.70	66	28.70	60	.....	54	50	46	.417	70	62	60	59	.555	89	58	51	50	.387	94	.....			
30	28.85	55	29.00	58	29.05	62	.....	52	50	48	.387	87	66	62	60	.638	80	55	41	43	.432	65	.....			
Sums	864.90	.....	864.85	.....	864.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....			
Mean	.....	.....	.....	.....	.....	.....	28.71	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	79			

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METEOROLOGICAL RECORD FOR THE MONTH OF JULY, 1886.

Place of observation: Lunenburgh, County of Essex, State of Vermont; latitude, 44°, 27' 43"; longitude, 71°, 40' 47"; height above the sea, 1210 feet.

Day of Month.	Ozone on Scale of 10.	THERMOMETER IN THE OPEN AIR.				RAIN AND SNOW.				CLOUDS.			WINDS.						Day of Month.
		7 A.M.	2 P.M.	9 P.M.	MEAN	Time of begin'g of rain or snow.	Time of ending of rain or snow.	Total am't. rain and melted snow, in inches.	Av. depth of snow-fall in inches.	7 A. M. Lower Clouds. Kind, am't.	2. P. M. Lower Clouds. Kind, am't.	9 P. M. Lower Clouds. Kind, am't.	7 A. M. Direction	7 A. M. Force.	2 P. M. Direction	2 P. M. Force.	9 P. M. Direction	9 P. M. Force.	
1	7	62	74	65	.....	.....	.....	.....	.....	0	0	0	N.	0	W.	0	N.W.	0	1
2	8	64	82	66	.....	.....	.....	.....	.....	0	0	0	W.	0	S.W.	0	W.	0	2
3	8	70	86	68	.....	.....	.....	.....	.....	0	0	0	W.	0	S.	0	S.W.	0	3
4	8	72	88	70	.....	.....	.....	.....	.....	0	0	0	S.W.	0	S.W.	0	W.	0	4
5	8	70	87	71	.....	.....	.....	.....	.....	0	5 C.	0	W.	0	S.W.	0	S.W.	0	5
6	8	68	84	77	.....	.....	.....	.....	.....	0	5 C.	2 C.	N.	0	N.	0	S.W.	0	6
7	8	70	85	70	.....	Shower.	6 p.m.	.05	.....	0	2 C.	8 Cu.	N.	0	S.W.	2	W.	3	7
8	8	62	72	59	.....	.....	.....	.....	.....	0	0	0	N.W.	0	W.	0	N.	0	8
9	9	60	75	65	.....	.....	.....	.....	.....	0	5 Cu.	0	E.	0	N.E.	1	W.	0	9
10	9	55	62	60	.....	11 a.m.	—	.....	.....	10 C. Cu.	10 N.	10 Cu.	N.E.	0	E.	0	N.W.	0	10
11	9	64	68	50	.....	—	4 a.m.	.60	.....	5 Cu.	5 C.	0	N.W.	0	W.	0	N.	0	11
12	9	50	65	55	.....	.....	.....	.....	.....	0	0	0	N.	1	W.	0	W.	0	12
13	9	52	70	60	.....	.....	.....	.....	.....	0	0	0	N.W.	1	S.W.	0	N.	0	13
14	9	58	72	62	.....	.....	.....	.....	.....	8 Cu.	10 C.	0	N.E.	0	S.E.	0	S.W.	0	14
15	8	60	73	65	.....	7 a.m.	—	.....	.....	10 N.	10 N.	10 Cu.	N.E.	0	N.E.	0	E.	0	15
16	7	62	75	65	.....	—	10 a.m.	.85	.....	10 N.	10 Cu.	5 C.	N.E.	0	S.W.	1	W.	0	16
17	6	65	78	68	.....	.....	.....	.....	.....	8 Cu.	2 C.	0	W.	0	S.W.	0	N.	0	17
18	5	66	76	62	.....	Shower.	4 p.m.	.35	.....	2 C.	10 Cu.	10 C. Cu.	N.E.	0	S.E.	0	N.E.	0	18
19	4	62	74	64	.....	Shower.	1 p.m.	.10	.....	10 S.	10 N.	10 Cu.	S.W.	0	S.W.	1	S.W.	0	19
20	4	64	66	56	.....	.....	.....	.....	.....	10 Cu. s.	10 Cu.	0	W.	0	W.	1	W.	0	20
21	3	62	70	60	.....	.....	.....	.....	.....	8 S.	5 C.	0	N.	0	S.W.	0	W.	0	21
22	3	65	74	65	.....	.....	.....	.....	.....	8 Cu.	0	0	W.	0	S.W.	0	N.	0	22
23	3	58	68	56	.....	.....	.....	.....	.....	10 Cu.	5 C.	0	S. E.	0	W.	0	W.	0	23
24	3	60	70	60	.....	.....	.....	.....	.....	0	0	0	W.	0	S.W.	0	N.	0	24
25	4	59	76	69	.....	.....	.....	.....	.....	0	0	5 C.	N.E.	0	S.	0	W.	0	25
26	4	60	74	65	.....	5 a.m.	11 a.m.	.12	.....	10 N.	8 Cu.	5 Cu.	N.E.	0	W.	0	N.	0	26
27	6	62	70	62	.....	Showers.	.....	.25	.....	5 C.	10 N.	0	N.E	0	S.W.	0	W.	0	27
28	7	65	76	63	.....	.....	.....	.....	.....	0	5 C.	0	W.	0	S.W.	0	N.	0	28
29	7	66	75	70	.....	.....	.....	.....	.....	0	8 Cu.	0	W.	0	S.W.	0	W.	0	29
30	8	68	78	68	.....	.....	.....	.....	.....	0	0	0	W.	0	S. W.	0	W.	0	30
31	9	64	75	65	.....	.....	.....	.....	.....	0	5 C.	0	W.	0	S. W.	0	W.	0	31
Sums.		1946	2218	1980	.....	.....	.....	2.32	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mean		.....	.....	.....	66.32	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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DATE.	BAROMETER.				HUMIDITY, DEW POINT, Etc.												Daily mean humidity.
	7 A. M.		2 P. M.		9 P. M.		7 A. M.				2 P. M.				9 P. M.		
1886.	Observed reading.	Attached therm'r.	Observed reading.	Attached therm'r.	Observed reading.	Attached therm'r.	Bar. corr'ted and reduced.	Dry-bulb therm'r.	Wet. bulb therm'r.	Dew point.	Tension of vapor.	Relative humidity.	Dry-bulb therm'r.	Wet-bulb therm'r.	Dew point.	Tension of vapor.	Relative humidity.	
1	29.05	64	29.05	70	29.05	65	.....	62	58	55	.555	79	74	68	65	.838	74	65	60	57	.616	75	....
2	29.00	65	29.00	80	28.95	68	.....	64	60	57	.595	79	82	78	77	1.091	84	66	65	64	.638	95	....
3	28.95	68	28.95	82	28.95	70	.....	70	68	63	.732	90	86	80	78	1.241	77	68	65	63	.684	85	....
4	29.00	70	29.00	84	29.00	77	.....	72	68	66	.783	82	88	86	85	1.322	92	70	68	67	.732	90	....
5	29.05	74	29.00	86	29.05	75	.....	70	65	62	.732	77	87	84	83	1.281	88	70	68	67	.757	86	....
6	29.00	69	28.95	80	28.85	78	.....	68	64	62	.684	81	84	80	79	1.163	84	71	68	67	.920	91	....
7	28.85	66	28.90	83	28.75	72	.....	70	68	67	.732	90	85	80	78	1.202	80	77	75	74	.732	83	....
8	28.85	66	28.90	75	28.95	62	.....	62	60	59	.555	89	72	68	66	.783	82	70	65	62	.449	77	....
9	29.00	64	29.00	74	28.95	66	.....	60	55	51	.517	73	75	70	67	.866	76	65	59	55	.616	70	....
10	28.85	58	28.75	70	28.70	62	.....	55	50	46	.432	70	68	58	55	.555	79	60	55	51	.517	73	....
11	28.65	66	28.70	70	28.75	60	.....	64	60	57	.595	79	68	64	62	.684	81	59	54	52	.360	74	....
12	28.75	60	28.75	69	28.75	58	.....	50	44	37	.360	61	65	61	59	.616	80	55	50	46	.432	70	....
13	28.80	61	28.85	70	28.85	62	.....	58	48	44	.387	75	70	65	62	.732	77	62	58	57	.517	89	....
14	28.90	60	28.90	74	28.90	64	.....	58	54	51	.481	78	72	69	67	.783	86	62	58	55	.555	79	....
15	28.90	65	28.80	72	28.80	65	.....	60	55	51	.517	73	73	69	67	.810	82	63	58	55	.575	74	....
16	28.75	64	28.75	74	28.80	66	.....	62	58	55	.555	79	75	71	69	.866	82	65	61	59	.616	80	....
17	28.80	66	28.80	78	28.85	68	.....	65	59	55	.616	79	78	76	75	.957	91	68	67	67	.684	95	....
18	28.80	67	28.80	75	28.75	64	.....	66	60	56	.638	71	76	70	67	.896	74	69	62	58	.536	89	....
19	28.60	65	28.80	76	28.60	60	.....	62	58	55	.555	79	74	70	67	.838	80	64	60	57	.595	79	....
20	28.65	66	28.60	68	28.65	63	.....	64	58	55	.595	79	70	65	62	.732	77	66	60	57	.488	88	....
21	28.65	68	28.65	71	28.65	66	.....	65	62	60	.616	85	74	70	68	.838	82	65	63	62	.616	90	....
22	28.85	68	28.75	74	28.85	60	.....	58	56	55	.481	89	68	66	65	.684	90	56	56	54	.448	65	....
23	28.95	65	28.95	71	29.00	68	.....	60	55	51	.517	73	70	68	67	.732	90	60	56	53	.517	78	....
24	28.90	65	28.90	74	28.85	65	.....	59	54	50	.499	72	76	72	70	.896	82	69	64	61	.707	76	....
25	28.80	65	28.75	72	28.75	66	.....	60	58	57	.517	89	74	72	71	.838	91	65	65	65	.616	100	....
26	28.65	66	28.65	75	28.65	68	.....	62	60	59	.555	89	70	68	67	.732	90	62	60	59	.555	89	....
27	28.80	67	28.75	77	28.75	72	.....	65	60	57	.616	75	76	74	73	.896	91	63	60	58	.575	84	....
28	28.80	69	28.70	78	28.70	70	.....	66	61	58	.638	76	75	70	68	.866	78	70	65	62	.732	77	....
29	28.75	70	28.80	79	28.85	70	.....	68	65	63	.684	85	78	76	75	.957	90	68	66	65	.684	90	....
30	28.85	66	28.85	76	28.85	69	.....	64	60	57	.595	79	75	73	72	.866	91	65	59	55	.616	70	....
31																							
Sums	893.70	.....	892.75	.....	893.55	.....	28.81	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	80
Mean																							

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METEOROLOGICAL RECORD FOR THE MONTH OF AUGUST, 1886.

Place of observation: Lunenburgh, County of Essex, State of Vermont; latitude, 44°, 27′ 48″; longitude, 71°, 40′ 47″; height above the sea, 1210 feet.

Day of Month.	Scale of 10 Ozone.	THERMOMETER IN THE OPEN AIR. 7 A.M.	2 P.M.	9 P.M.	MEAN	RAIN AND SNOW. Time of begin'g of rain or snow.	Time of ending of rain or snow.	Total amt. rain and melted snow in inches.	Av. depth of snow-fall in inches.	CLOUDS. 7 A. M. Lower Clouds. Kind, am't.	2 P. M. Lower Clouds. Kind, am't.	9 P. M. Lower Clouds. Kind, am't.	WINDS. 7 A. M. Direction	Force.	2 P. M. Direction	Force.	9 P. M. Direction	Force.	Day of Month.
1	9	65	78	68	.....	8 P. M.	—	.....	.....	0	5 Cu.	10 N.	N. E.	0	S. E.	0	E.	0	1
2	9	64	70	50	.....	—	6 A. M.	.75	.....	10 N.	5 C.	0	N.W.	0	W.	2	N.W.	1	2
3	8	50	54	55	.....	8 P. M.	Night.	.20	.....	10 C. Cu.	8 Cu.	10 N.	N.W.	2	W.	1	W.	1	3
4	8	55	65	54	.....	.....	.....	.....	.....	Cu.	10 N.	5 C.	N.	0	S. E.	0	N.	0	4
5	8	54	64	57	.....	Showers.	.....	.05	.....	0	10 N.	0	N.E.	0	W.	0	N.W.	0	5
6	8	58	70	60	.....	.....	.....	.....	.....	0	0	0	N.	0	S. W.	0	S. W.	0	6
7	8	60	75	58	.....	.....	.....	.....	.....	0	5 C.	0	W.	0	S. W.	0	N.	0	7
8	8	62	80	60	.....	.....	.....	.....	.....	0	0	0		0	S. W.	0	W.	0	8
9	8	65	85	73	.....	.....	.....	.....	.....	0	0	0	N.	0	S.	0	W.	0	9
10	7	68	82	75	.....	.....	.....	.....	.....	0	0	0	W.	0	S. W.	0	S. W.	0	10
11	7	66	81	70	.....	Shower.	7 P. M.	.50	.....	0	5 C.	10 N.	N.	0	N. E	0	S E.	0	11
12	8	60	72	64	.....	.....	.....	.....	.....	0	5 Cu.	0	N.W.	1	W.	1	W.	0	12
13	8	62	75	66	.....	.....	.....	.....	.....	0	0	5 C.	W.	0	S. W.	1	S. W.	0	13
14	9	60	76	68	.....	Shower.	6 A. M.	.65	.....	10 N.	5 Cu.	0	W.	2	S.	1	W.	0	14
15	9	55	68	55	.....	.....	.....	.....	.....	0	0	0	N.W.	1	W.	1	N.	0	15
16	9	54	66	59	.....	7 A. M.	—	.....	.....	0	5 Cu.	10 N.	N.E.	0	E.	0	E.	0	16
17	8	56	62	49	.....	—	7 A. M.	1.45	.....	10 Cu.	10 C. Cu.	0	N.	1	N.W.	1	N.	0	17
18	8	54	65	52	.....	Showers.	.....	.....	.....	5 S.	10 N.	5 C.	N.W.	0	W.	0	W.	0	18
19	7	56	68	54	.....	.....	.....	.....	.....	8 Cu.	5 C.	0	N.	0	W.	0	N.W.	0	19
20	7	60	72	60	.....	.....	.....	.....	.....	0	0	0	N.	0	N.W.	0	W.	0	20
21	7	64	74	60	.....	.....	.....	.....	.....	0	0	0	W.	0	W.	0	N.	0	21
22	7	63	76	62	.....	.....	.....	.....	.....	0	0	0	W.	0	S. W.	0	W.	0	22
23	8	65	78	64	.....	.....	.....	.....	.....	8 S.	5 C.	0	N.	0	W.	0	N.	0	23
24	7	64	70	65	.....	7 A. M.	1 P. M.	.20	.....	10 N.	10 N.	10 Cu.	N.E.	0	S. W.	0	W.	0	24
25	6	63	75	60	.....	.....	.....	.....	.....	5 Cu.	5 C.	0	N.	0	S.	0	N.	0	25
26	6	64	78	64	.....	.....	.....	.....	.....	8 Sir.	0	5 C.	N.	0	S. W.	0	W.	0	26
27	6	68	84	70	.....	.....	.....	.....	.....	0	0	0	W.	0	S.	0	S. W.	0	27
28	4	70	85	69	.....	.....	.....	.....	.....	5 Sir.	0	0	S.W.	0	S. W.	0	W.	0	28
29	3	67	82	68	.....	.....	.....	.....	.....	0	0	0	W.	0	W.	0	N.	0	29
30	5	68	78	65	.....	9 P. M.	—	.....	.....	0	6 Cu.	10 N.	N.	0	N.W.	0	N. E.	0	30
31	6	65	70	55	.....	—	2 P. M.	.90	.....	10 N.	10 N.	10 Cu.	N.E.	0	N.W.	0	N.W.	0	31
.....	Sums	1905	2278	1909	.....	.....	.....	4.70	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	Mean	.....	.....	.....	64.52	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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DATE.	BAROMEMER.					HUMIDITY, DEW POINT, ETC.																
	7 A. M.		2 P. M.		9 P. M.			7 A. M.					2 P. M.					9 P. M.				
1886.	Observed reading.	Attached thermometer.	Observed reading.	Attached thermometer.	Observed reading.	Attached thermometer.	Barometer corrected and reduced.	Dry-bulb thermometer.	Wet-bulb thermometer.	Dew Point.	Tension of vapor.	Relative humidity.	Dry-bulb thermometer.	Wet-bulb thermometer.	Dew Point.	Tension of vapor.	Relative humidity.	Dry-bulb thermometer.	Wet-bulb thermometer.	Dew Point.	Tension of vapor.	Relative humidity.	Daily mean humidity.
1	28.75	68	28.70	75	28.65	70	.....	65	61	59	.616	80	78	76	75	.957	91	68	66	65	.684	90	.....
2	28.90	66	28.45	72	28.50	68	.....	64	60	57	.565	70	70	68	67	.732	90	50	45	40	.360	68	.....
3	28.90	55	28.45	56	28.55	60	.....	50	47	44	.360	80	54	54	43	.417	64	55	52	50	.432	82	.....
4	28.70	60	28.80	69	28.85	68	.....	55	52	50	.432	82	65	60	57	.616	75	54	50	46	.417	76	.....
5	28.90	61	28.85	70	28.80	68	.....	54	50	48	.417	76	70	68	64	.595	70	57	56	55	.465	84	.....
6	28.90	64	28.85	74	28.90	68	.....	58	54	51	.481	78	75	68	68	.732	90	58	58	57	.517	89	.....
7	28.90	65	28.85	76	28.85	65	.....	60	54	49	.517	86	80	78	70	1.022	92	60	58	47	.481	67	.....
8	28.85	66	29.00	77	29.10	65	.....	62	60	59	.555	85	85	83	78	1.202	92	73	70	52	.517	75	.....
9	29.15	69	29.10	80	29.10	70	.....	65	62	60	.616	85	85	83	78	1.202	92	75	70	69	.810	86	.....
10	29.10	68	29.00	82	28.90	76	.....	68	64	62	.684	81	82	79	78	1.091	88	75	68	68	.866	78	.....
11	28.80	70	28.75	80	28.65	74	.....	66	63	61	.638	85	81	77	76	1.056	84	70	68	67	.738	90	.....
12	28.70	64	28.70	74	28.80	68	.....	60	56	53	.517	84	72	68	65	.783	79	64	61	59	.595	85	.....
13	28.75	64	28.70	75	28.65	69	.....	60	58	57	.555	84	75	70	68	.866	78	66	64	59	.638	80	.....
14	28.53	64	28.65	74	28.70	65	.....	60	56	53	.517	78	76	70	67	.896	74	68	64	62	.684	81	.....
15	28.80	60	28.85	70	28.90	63	.....	55	54	53	.432	70	68	64	62	.684	81	55	50	46	.432	70	.....
16	28.80	58	28.75	66	28.65	60	.....	54	50	46	.417	70	66	60	60	.638	80	59	54	50	.499	72	.....
17	28.70	59	28.75	65	28.85	55	.....	56	52	49	.448	77	68	58	55	.555	79	49	46	43	.347	75	.....
18	28.90	53	28.95	68	28.95	58	.....	54	50	46	.419	76	65	60	56	.616	72	53	48	44	.387	75	.....
19	29.05	60	29.10	69	29.15	59	.....	56	50	49	.448	77	68	64	62	.684	81	54	50	46	.417	76	.....
20	29.15	62	28.15	70	29.10	60	.....	60	56	53	.517	78	72	66	63	.783	73	60	53	49	.517	78	.....
21	29.00	66	28.90	73	28.80	65	.....	64	60	57	.595	70	74	66	62	.888	66	60	54	49	.517	68	.....
22	28.80	68	28.80	75	28.75	66	.....	63	60	57	.575	82	76	70	68	.896	82	62	60	59	.555	89	.....
23	28.80	67	28.80	77	28.80	68	.....	65	60	57	.616	75	78	70	67	.957	67	64	60	54	.595	70	.....
24	28.80	66	28.85	71	28.90	64	.....	64	60	54	.595	70	70	64	61	.732	72	65	62	60	.616	85	.....
25	28.90	64	28.95	72	28.95	64	.....	63	60	57	.575	88	75	73	72	.866	91	60	58	57	.517	89	.....
26	28.90	65	28.80	74	28.75	68	.....	64	62	61	.595	90	78	74	72	.957	83	64	61	59	.595	85	.....
27	28.85	68	28.85	76	28.85	68	.....	64	62	62	.684	81	84	80	79	1.163	84	68	68	67	.732	90	.....
28	28.85	70	28.85	82	28.85	71	.....	68	68	67	.732	90	85	83	82	1.202	92	70	69	68	.707	67	.....
29	28.85	69	28.85	79	28.90	70	.....	70	68	66	.661	85	85	82	80	1.091	92	68	64	62	.684	81	.....
30	28.85	68	28.80	77	28.75	68	.....	67	64	61	.684	78	78	75	74	.957	87	65	65	65	.616	100	.....
31	28.65	67	28.70	71	28.75	68	.....	68	63	63	.616	100	70	69	69	.732	95	55	53	52	.432	88	.....
Sums	892.80	.....	892.55	.....	892.65	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	80
Mean	.....	.....	.....	.....	.....	.....	28.78	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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METEOROLOGICAL RECORD FOR THE MONTH OF SEPTEMBER, 1886.

Place of observation: Lunenburgh, County of Essex, State of Vermont; latitude 44° 27′ 43″; longitude 71° 40′ 47″; height above the sea, 1210 feet.

Day of Month.	Ozone on Scale of 10.	THERMOMETER IN THE OPEN AIR.				RAIN AND SNOW.				CLOUDS.			WINDS.						Day of Month.
		7 A.M.	2 P.M.	9 P.M.	MEAN.	Time of beginni'g of rain or snow.	Time of ending of rain or snow.	Total am't, rain and melted snow in inches.	Average depth of snow-fall in inches	7 A. M. Lower Clouds. Kind, Am't.	2 P. M. Lower Clouds. Kind, Am't.	9 P. M. Lower Clouds. Kind, Am't.	7 A. M. Directi'n	7 A. M. Force.	2 P. M. Directi'n	2 P. M. Force.	9 P. M. Directi'n	9 P. M. Force.	
1	4	52	60	45	.....	.....	.....	.....	.....	5 C. Cu.	0	0	W.	0	W.	0	N.W.	0	1
2	6	38	67	49	.....	.....	.....	.....	.....	0	0	0	N.	0	S.W.	0	W.	0	2
3	6	46	70	54	.....	.....	.....	.....	.....	0	5 C.	0	W.	0	S.W.	0	N.	0	3
4	6	50	69	55	.....	.....	.....	.....	.....	10 St.	0	0	N.W.	0	W.	0	N.W.	0	4
5	6	54	72	60	.....	.....	.....	.....	.....	10 St.	0	0	W.	0	S.W.	0	N.	0	5
6	6	59	75	60	.....	.....	.....	.....	.....	5 St.	0	0	W.	0	S.W.	0	W.	0	6
7	5	64	79	66	.....	.....	.....	.....	.....	0	0	0	N.	0	S.W.	0	W.	0	7
8	5	62	84	71	.....	.....	.....	.....	.....	0	0	0	W.	0	W.	0	N.	1	8
9	5	65	86	69	.....	.....	.....	.....	.....	0	0	0	N.	0	S.W.	0	W.	0	9
10	5	64	80	68	.....	.....	.....	.....	.....	5 Cu.	0	0	W.	0	S.	0	W.	0	10
11	4	62	70	58	.....	.....	.....	.....	.....	10 N.	5 C.	0	N.W.	1	W.	2	N.W.	0	11
12	6	55	64	54	.....	4 A. M.	3 P. M.	.53	.....	10 C. Cu.	10 N.	0	N.E.	0	W.	1	N.W.	0	12
13	7	50	58	44	.....	.....	.....	.....	.....	8 Cu.	5 C.	0	N.	0	W.	1	N.W.	0	13
14	7	54	62	50	.....	Night.	9. A. M.	.35	.....	10 N.	5 C.	0	N.W.	0	S.W.	0	W.	0	14
15	7	56	70	58	.....	.....	.....	.....	.....	0	0	0	N.	0	S.	0	N.	0	15
16	6	50	64	56	.....	Showers.	.....	.20	.....	10 Cu.	10 N.	10 N.	S.	0	S.W.	0	W.	0	16
17	4	58	72	65	.....	Showers.	.....	60	.....	5 Cu.	10 N.	10 C.	W.	0	S.	0	N.	0	17
18	4	50	68	60	.....	.....	.....	.....	.....	0	5 C.	0	N.	0	W.	0	N.E.	0	18
19	4	40	62	57	.....	Shower.	8 P. M.	.10	.....	8 Cu.	10 Cu.	10 N.	N.E.	0	W.	1	S.E.	0	19
20	3	41	54	39	.....	.....	.....	.....	.....	10 Cu.	5 C.	0	N.	0	N.W.	1	N.W.	0	20
21	3	39	55	38	.....	.....	.....	.....	.....	0	5 Cu.	10 C. Cu.	N.W.	0	W.	0	N.	0	21
22	3	35	59	37	.....	.....	.....	.....	.....	0	0	0	N.	0	S.W.	0	W.	0	22
23	3	40	60	45	.....	.....	.....	.....	.....	10 Cu.	8 Cu.	10 C. Cu.	N.E.	0	W.	0	N.	0	23
24	3	42	62	50	.....	.....	.....	.....	.....	10 S.	5 C.	0	N.	0	S.W.	0	W.	0	24
25	3	44	65	56	.....	.....	.....	.....	.....	8 S.	5 Cu.	10 C. Cu.	W.	0	W.	0	N.E.	0	25
26	3	46	68	58	.....	2 P. M.	—	.....	.....	10 C. Cu.	10 N.	10 N.	N.E.	0	S.E.	0	W.	0	26
27	2	50	70	59	.....	—	—	.....	.....	8 Cu.	10 Cu. n.	8 Cu.	N.E.	0	W.	0	S.W.	0	27
28	2	52	69	55	.....	—	11 P. M.	2 20	.....	10 Cu. s.	10 N.	10 N.	N.E.	0	S.E.	0	N.E.	0	28
29	2	50	66	50	.....	.....	.....	.....	.....	5 Cu.	0	0	N.	0	S.W.	0	W.	0	29
30	1	48	65	45	.....	.....	.....	.....	.....	0	0	0	N.W.	0	W.	1	N.W.	0	30
Sums	.....	1515	2025	1631	.....	.....	.....	3.98	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mean	.....	.....	.....	.....	56.68	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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DATE.	BAROMETER.					HUMIDITY, DEW POINT, ETC.																	
	7 A. M.		2 P. M.		9 P. M.		7 A. M.					2 P. M.					9 P. M.					
1886.	Observed reading.	Attached thermom'tr	Observed reading.	Attached thermom'tr	Observed reading.	Attached thermom'tr	Barometer corrected and reduc'd	Dry-bulb thermometer.	Wet-bulb thermometer.	Dew point	Tension of vapor.	Relative humidity.	Dry-bulb thermometer.	Wet-bulb thermometer.	Dew point.	Tension of vapor.	Relative humidity.	Dry-bulb thermometer.	Wet-bulb thermometer.	Dew point.	Tension of vapor.	Relative humidity.	Daily mean humidity.
1	29.00	56	29.05	62	29.15	50	.....	52	50	48	.387	87	60	55	53	.517	73	45	42	39	.298	78	.....
2	29.15	50	29.30	64	29.35	54	.....	38	36	33	.223	83	67	60	55	.661	68	49	42	33	.347	54	.....
3	29.30	49	29.30	72	29.35	58	.....	46	42	37	.310	72	70	63	59	.732	68	54	50	46	.417	76	.....
4	29.35	55	29.30	70	29.25	60	.....	50	48	46	.360	87	69	61	55	.707	61	55	51	48	.432	76	.....
5	29.25	58	29.20	72	29.20	62	.....	54	50	46	.417	76	72	65	61	.793	68	60	55	51	.517	73	.....
6	29.20	64	29.20	76	29.20	64	.....	59	55	52	.499	78	75	70	68	.866	78	66	60	56	.638	71	.....
7	29.20	66	29.20	77	29.15	68	.....	64	60	57	.595	79	79	75	73	1.103	83	71	67	64	.732	81	.....
8	29.10	65	29.05	82	29.00	72	.....	62	58	55	.535	79	84	80	79	1.163	84	71	69	64	.732	76	.....
9	28.95	66	28.90	80	28.90	71	.....	65	61	59	.616	80	86	78	75	1.241	70	68	64	61	.707	76	.....
10	28.95	64	28.80	79	28.80	70	.....	64	60	57	.595	79	80	71	67	1.022	64	63	60	60	.684	83	.....
11	28.75	60	28.75	72	28.80	62	.....	62	56	52	.535	69	70	65	62	.732	77	58	55	53	.481	83	.....
12	28.75	61	28.70	70	28.75	66	.....	55	53	52	.432	88	69	62	61	.595	90	54	51	49	.417	82	.....
13	28.80	58	28.85	65	28.85	54	.....	50	46	42	.360	74	58	50	42	.481	56	44	40	35	.288	70	.....
14	28.85	60	28.90	64	29.00	56	.....	54	50	46	.417	76	70	63	59	.555	79	50	48	46	.360	87	.....
15	29.10	62	29.15	72	29.25	60	.....	55	51	48	.432	76	76	68	59	.732	68	58	52	47	.481	67	.....
16	29.10	60	29.00	68	29.00	64	.....	50	46	42	.360	74	64	59	56	.595	74	56	52	49	.448	77	.....
17	29.00	64	28.95	74	28.90	68	.....	58	54	51	.481	78	72	68	66	.783	82	65	61	59	.616	89	.....
18	28.85	66	28.80	69	28.80	69	.....	50	57	44	.360	80	68	62	58	.684	71	60	53	57	.517	89	.....
19	28.75	50	28.70	69	28.60	62	.....	40	40	40	.246	100	62	60	59	.555	89	57	54	52	.465	83	.....
20	28.65	52	28.75	62	28.85	48	.....	41	40	39	.256	92	54	51	49	.417	82	39	37	34	.237	83	.....
21	28.85	48	28.90	60	28.95	40	.....	39	34	26	.257	58	55	50	46	.432	70	38	34	28	.228	66	.....
22	28.95	46	28.95	62	29.00	48	.....	35	31	32	.203	91	59	54	50	.499	72	37	34	29	.219	74	.....
23	29.00	45	29.00	63	29.05	50	.....	40	38	35	.246	84	60	54	42	.517	58	45	41	36	.298	71	.....
24	29.05	45	29.05	64	29.05	56	.....	42	38	33	.266	69	62	56	50	.555	41	50	46	42	.360	74	.....
25	29.05	50	29.00	68	28.90	55	.....	44	40	35	.288	70	65	62	60	.616	85	56	54	53	.448	88	.....
26	28.80	52	28.70	69	28.60	58	.....	46	45	44	.310	93	68	64	62	.684	81	58	54	51	.481	78	.....
27	28.65	56	28.75	72	28.80	60	.....	50	45	40	.306	68	70	65	62	.732	77	59	54	50	.499	72	.....
28	28.75	55	28.70	70	28.65	60	.....	52	48	44	.387	75	69	64	61	.707	76	55	54	53	.432	94	.....
29	28.70	56	28.75	69	28.75	56	.....	50	48	46	.360	87	66	62	60	.638	80	50	48	46	.360	87	.....
30	28.75	54	28.70	68	28.65	50	.....	48	44	40	.334	73	65	62	60	.616	85	45	42	39	.298	78	.....
Sums	868.40	.....	.....	.....	868.45	.....	28.93	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mean	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	76

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METEOROLOGICAL RECORD FOR THE MONTH OF OCTOBER, 1886.

Place of observation: Lunenburgh, County of Essex, State of Vermont; latitude, 44°, 27′ 48″; longitude, 71°, 40′ 47″; height above the sea, 1210 feet.

Day of Month.	Scale of 10 Ozone.	THERMOMETER IN THE OPEN AIR.				RAIN AND SNOW.				CLOUDS.			WINDS.						Day of Month.
		7 A.M.	2 P.M.	9 P.M.	MEAN	Time of begin'g of rain or snow.	Time of ending of rain or snow.	Total amt. rain and melted snow in inches.	Av. depth of snow-fall in inches.	7 A. M. Lower Clouds. Kind, am't.	2 P. M. Lower Clouds. Kind, am't.	9 P. M. Lower Clouds. Kind, am't.	7 A.M. Direction	7 A.M. Force.	2 P.M. Direction	2 P.M. Force.	9 P.M. Direction	9 P.M. Force.	
1	1	39	50	35	.....	.....	.....	.....	.....	0	0	0	N.	1	W.	1	N.W.	4	1
2	2	37	44	32	.....	.....	.....	.....	.....	0	0	0	N W.	1	S. W.	0	W.	0	2
3	2	38	50	40	.....	.....	.....	.....	.....	0	0	0	W.	0	W.	0	N.	0	3
4	2	40	62	50	.....	Shower.	9 A. M.	.10	.....	0	8 Cu.	10 N.	N.	0	S. W.	0	W.	0	4
5	2	39	68	46	.....	.....	.....	.....	.....	5 C.	0	0	W.	0	S. W.	0	N.	0	5
6	3	40	65	45	.....	.....	.....	.....	.....	0	0	0	N.	0	W.	0	N.W.	0	6
7	4	45	69	50	.....	.....	.....	.....	.....	0	0	0	N.W.	0	S. W.	0	W.	0	7
8	4	50	70	54	.....	.....	.....	.....	.....	0	0	0	W.	0	S. W.	0	W.	0	8
9	4	56	72	56	.....	.....	.....	.....	.....	0	0	0	N.	0	W.	0	W.	0	9
10	4	58	70	55	.....	.....	.....	.....	.....	8 S.	0	0	W.	0	S.	0	W.	0	10
11	4	55	69	58	.....	.....	.....	.....	.....	10 C. S.	5 Cu.	5 C.	N.	0	S. W.	0	N.	0	11
12	4	56	68	52	.....	3 P. M.	10 P. M.	.15	.....	5 Cu.	10 Cu.	10 N.	E.	0	S. E.	0	N.E	2	12
13	4	57	67	50	.....	.....	.....	.....	.....	10 Cu.	10 C Cu.	5 C.	S.W.	0	S. W.	0	W.	0	13
14	5	55	68	51	.....	.....	.....	.....	.....	8 C. S.	8 Cu.	10 Cu.	S.E.	0	S E.	0	E.	0	14
15	5	50	60	39	.....	Showers.	.....	.05	.....	10 N.	10 N.	5 C.	S.W.	1	W.	1	N.W.	2	15
16	5	29	38	30	.....	Snow	Squall.	.....	.....	10 N.	8 Cu.	8 Cu.	N.	0	W.	0	N.W.	0	16
17	5	31	40	35	.....	.....	.....	.....	.....	0	0	5 C.	N.W.	0	N.W.	1	N.	0	17
18	6	33	45	36	.....	.....	.....	.....	.....	8 Cu.	5 C.	0	N.	0	W.	0	W.	0	18
19	6	38	55	37	.....	.....	.....	.....	.....	0	0	0	W.	0	S. W	0	W.	0	19
20	6	35	58	50	.....	.....	.....	.....	.....	0	0	5 C	N.	0	S. W.	0	N.	0	20
21	6	40	52	48	.....	Showers.	.....	.10	.....	10 N.	10 Cu.	8 Cu.	N.W.	4	W.	2	W.	1	21
22	7	46	60	52	.....	.....	.....	.....	.....	0	0	0	N.E.	0	S. W.	1	S. E.	3	22
23	7	40	45	32	.....	.....	.....	.....	.....	0	0	0	N.W.	0	W.	0	N.	0	23
24	7	38	46	40	.....	.....	.....	.....	.....	0	0	5 C.	N.	0	W.	0	W.	0	24
25	8	40	50	42	.....	.....	.....	.....	.....	5 C.	8 Cu.	10 C. Cu.	W.	0	S. W.	0	N.	0	25
26	8	35	45	38	.....	.....	.....	.....	.....	10 Cu. S.	10 Cu.	8 Cu.	N.	0	W.	0	N.W.	0	26
27	8	38	50	45	.....	6 A. M.	—	.....	.....	10 N.	10 N.	10 N.	W.	0	S. W.	0	S. E.	0	27
28	8	40	56	50	.....	—	9 A. M.	.75	.....	10 N.	8 Cu.	5 C.	N. E	0	N. E.	0	N.	0	28
29	8	42	58	45	.....	.....	.....	.....	.....	8 Cu.	5 Cu.	5 C.	N	0	W.	0	W.	0	29
30	8	46	60	46	.....	.....	.....	.....	.....	10 S.	10 C. Cu.	10 Cu.	N.W.	0	W.	0	N.	0	30
31	8	45	59	47	.....	4 A. M.	10 A. M.	.25	.....	10 N.	10 Cu.	10 C. Cu.	N.E.	0	N. E.	0	N.W.	0	31
Sums	.....	1341	1769	1386	.....	.....	.....	1.40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...
Means	.....	.....	.....	.....	47.43	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...

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DATE.	BAROMETER.					HUMIDITY, DEW POINT, ETC.																Daily mean humidity.
	7 A. M.		2 P. M.		9 P. M.		7 A. M.					2 P. M.					9 P. M.					
1886.	Observed reading.	Attached therm'r.	Observed reading.	Attached therm'r.	Observed reading.	Attached therm'r.	Bar. cor'ted and reduced.	Dry-bulb therm'r.	Wet-bulb therm'r.	Dew point.	Tension of vapor.	Relative humidity.	Dry-bulb therm'r.	Wet-bulb therm'r.	Dew point.	Tension of vapor.	Relative humidity.	Dry-bulb therm'r.	Wet-bulb therm'r.	Dew point.	Tension of vapor.	Relative humidity.	
1	28.65	45	28.60	54	28.75	40	.....	39	37	34	.237	83	50	44	37	.300	61	35	32	27	.203	72	....
2	28.95	40	29.05	52	29.10	39	.....	37	33	26	.219	65	44	40	35	.288	70	32	30	27	.180	80	....
3	29.10	50	29.10	54	29.05	45	.....	38	36	33	.228	83	50	44	37	.360	61	40	38	35	.246	84	....
4	28.85	55	28.75	62	28.85	55	.....	40	38	33	.246	84	62	60	53	.555	80	50	48	40	.360	87	....
5	28.90	56	29.00	64	29.00	60	.....	39	36	32	.237	75	68	65	59	.684	85	46	41	35	.310	66	....
6	29.00	55	29.00	62	29.00	50	.....	40	38	35	.246	84	65	60	57	.616	75	45	41	36	.298	71	....
7	29.00	58	29.00	70	29.05	54	.....	45	42	40	.298	78	69	65	63	.707	81	50	45	40	.360	68	....
8	29.00	60	29.00	71	29.00	60	.....	50	45	40	.360	78	70	65	62	.732	77	54	50	46	.417	76	....
9	29.00	59	29.00	74	29.00	62	.....	56	53	51	.448	82	72	68	67	.783	82	56	51	47	.448	77	....
10	29.00	60	29.05	71	29.10	60	.....	58	54	51	.481	78	70	68	67	.732	88	55	52	50	.432	71	....
11	29.10	61	29.05	70	29.00	59	.....	55	50	46	.432	70	69	63	59	.707	90	55	54	51	.481	88	....
12	28.85	60	28.75	68	28.65	56	.....	56	53	51	.448	82	68	64	62	.684	72	58	48	48	.387	78	....
13	28.80	55	29.00	69	29.05	54	.....	57	52	48	.405	71	67	64	62	.661	85	50	44	37	.300	75	....
14	28.95	57	28.75	68	28.65	56	.....	55	50	46	.432	78	68	64	62	.684	81	51	48	45	.373	81	....
15	28.90	52	28.55	62	28.65	46	.....	50	48	46	.360	87	60	58	57	.517	89	39	34	26	.237	58	....
16	28.80	48	28.90	60	29.10	42	.....	29	22	-2	.159	26	38	37	36	.228	92	30	35	13	.166	81	....
17	29.10	50	29.05	58	29.00	40	.....	31	30	28	.173	90	40	35	27	.246	59	35	33	30	.203	81	....
18	29.10	48	29.15	55	29.20	39	.....	33	32	30	.187	90	45	40	33	.298	64	30	32	25	.211	64	....
19	29.30	49	29.25	60	29.25	40	.....	33	34	28	.228	85	55	50	46	.432	70	37	34	29	.219	74	....
20	29.20	40	29.10	62	29.00	58	.....	35	33	28	.203	81	58	52	47	.481	67	50	48	46	.360	87	....
21	28.90	49	28.80	63	28.70	56	.....	40	38	35	.246	84	52	48	44	.387	75	48	44	40	.334	73	....
22	28.70	50	28.70	64	28.70	58	.....	46	44	42	.310	85	60	55	51	.517	83	52	48	44	.387	75	....
23	29.00	45	29.05	60	29.10	55	.....	40	38	35	.246	84	45	42	39	.298	78	32	30	27	.180	80	....
24	29.10	48	29.10	58	29.10	45	.....	38	34	28	.228	66	46	44	42	.310	85	40	38	35	.246	84	....
25	29.10	46	29.05	60	29.00	48	.....	40	38	35	.246	84	50	46	42	.360	74	44	38	33	.266	69	....
26	29.30	44	29.30	56	29.30	44	.....	35	32	27	.203	78	45	42	39	.298	78	38	34	28	.228	66	....
27	29.20	48	29.10	60	28.95	48	.....	38	34	28	.228	66	50	46	42	.360	74	45	42	39	.298	78	....
28	28.90	50	28.80	62	28.80	56	.....	40	38	35	.246	84	56	52	48	.432	76	50	48	46	.360	87	....
29	28.85	52	28 85	59	28.90	50	.....	42	40	38	.266	84	58	54	50	.481	78	45	42	39	.298	78	....
30	28.95	54	28.80	60	28.85	54	.....	46	42	37	.310	72	60	56	53	.517	78	46	44	41	.298	85	....
31	28.80	50	28.80	62	28.80	50	.....	45	43	41	.298	85	59	54	50	.499	72	47	44	41	.322	79	....
Sums	897.75	.....	897.50	.....	897.75	.....	29.06	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	75
Mean	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

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METEOROLOGICAL RECORD FOR THE MONTH OF NOVEMBER, 1886.

Place of observation: Lunenburgh, County of Essex, State of Vermont; latitude 44° 27′ 43″; longitude 71° 40′ 47″; height of above the sea 1210 feet.

Day of Month.	Ozone on Scale of 10.	THERMOMETER IN THE OPEN AIR.				RAIN AND SNOW.				CLOUDS.			WINDS.						Day of Month.
		7 A.M.	2 P.M.	9 P.M.	M-A	Time of beginning of rain or snow.	Time of ending of rain or snow.	Total amt., rain and melted snow in inches.	Average depth of snow-fall in inches.	7 A. M. Lower Clouds. Kind, am't.	2 P. M. Lower Clouds. Kind, am't.	9 P. M. Lower Clouds. Kind, am't.	7 A. M. Direction	7 A. M. Force	2 P. M. Direction	2 P. M. Force	9 P. M. Direction	9 P. M. Force	
1	8	45	57	40	.....	.....	.....	.....	.....	10 Cu.	0	0	W.	0	W.	0	N.	0	1
2	8	37	58	47	.....	.....	.....	.....	.....	10 Cu.	1 C.	0	N.	0	S. W.	0	N.	1	2
3	8	46	58	48	.....	.....	.....	.....	.....	1 C.	5 C.	1 C.	N. W.	0	S. W.	3	S. W.	3	3
4	8	48	46	35	.....	6 A. M.	9 A. M.	.15	.....	10 N.	3 Cu.	0	S. W.	4	W.	3	W.	1	4
5	8	30	51	48	.....	.....	.....	.....	.....	1 C.	10 Cu.	10 Cu.	N. W.	0	S.	3	S. W.	3	5
6	8	43	53	50	.....	.....	.....	.....	.....	10 N.	10 C	10 N.	N.	0	S. E.	1	S.	1	6
7	9	36	32	24	.....	7 A. M.	10 P. M.	.55	.50	10 N.	10 N.	10 N.	S. W.	4	S. W.	4	S. W.	3	7
8	10	24	28	24	.....	.....	.....	.....	.....	10 C.	10 C.	10 C.	W.	0	W.	2	W.	0	8
9	10	19	38	32	.....	.....	.....	.....	.....	10 C.	10 C.	0	S. W.	0	S. W.	0	S. W.	0	9
10	10	23	38	37	.....	3 P. M.	—	.....	.....	10 N.	10 N.	10 N.	N.	0	S. W.	0	S. W.	0	10
11	10	36	43	37	.....	—	9 P. M.	.10	.....	10 N.	10 N.	10 N.	S. W.	0	N. W.	1	S. W.	0	11
12	10	32	34	30	.....	Showers.	.....	.10	.....	10 N.	10 N.	10 N.	W.	0	W.	0	W.	0	12
13	10	28	32	30	.....	3 A. M.	—	.....	.....	10 N.	10 N.	10 N.	N. E.	3	S. E.	2	N. W.	1	13
14	10	24	30	26	.....	—	10 A. M.	60	6.00	10 N.	8 Cu.	0	N. W.	4	N. W.	3	N. W.	2	14
15	10	22	34	28	.....	.....	.....	.....	.....	0	5 C.	0	N. W.	1	W.	2	W.	1	15
16	9	24	30	25	.....	.....	.....	.....	.....	0	0	0	N.	0	W.	0	N.	0	16
17	9	20	26	39	.....	10 A. M.	—	.....	.....	8 Cu.	10 N.	10 N.	N. E.	0	N. E.	0	N. E.	0	17
18	7	38	44	36	.....	—	9 P. M.	.70	2.00	10 N.	10 N.	10 N.	N. E.	0	S. E.	0	W.	3	18
19	6	28	30	25	.....	.....	.....	.....	.....	10 N.	10 N.	10 N..	N.	0	W.	2	N. W.	4	19
20	4	24	38	30	.....	.....	.....	.....	2 00	10 Cu.	8 Cu.	5 C.	N. W.	2	W.	1	N.	0	20
21	3	25	34	21	.....	.....	.....	.....	.....	8 Cu.	5 C.	8 C.	W.	0	S. W.	0	W.	0	21
22	3	24	35	24	.....	.....	.....	.....	.....	0	0	5 C.	N.	0	W.	0	N.	0	22
23	3	30	40	32	.....	Showers.	.....	.10	.....	10 Cu.	10 N.	10 Cu. S.	S. E.	0	E.	0	N. E.	0	23
24	3	34	42	38	.....	.....	.....	.....	.....	10 C. S.	10 C. Cu.	10 Cu.	W.	0	W.	1	N.	1	24
25	4	30	40	30	.....	11 A. M.	—	.....	.....	10 C.	10 N.	10 N.	N. E.	0	N. E.	0	S. E.	0	25
26	5	38	35	24	.....	—	11 A. M.	140	14.00	10 N.	8 Cu.	0	N. W.	3	W.	2	W.	1	26
27	5	10	25	10	.....	.....	.....	.....	.....	0	0	0	N. W.	0	N. W.	0	N.	0	27
28	5	12	28	26	.....	.....	.....	.....	.....	0	5 C.	0	N.	0	W.	0	W.	0	28
29	5	30	42	40	.....	.....	.....	.....	.....	0	5 C.	10 N.	W.	1	S. W.	2	S. W.	2	29
30	5	32	44	38	.....	.....	.....	.....	.....	8 Cu. S.	10 Cu.	10 C. Cu.	S. E.	0	S. W.	1	S. E.	1	30
Sums.	.....	876	1165	978	.....	.....	.....	3.90	24.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	...
Mean	.....	.....	.....	.....	3330	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...

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DATE.	BAROMETER.					HUMIDITY, DEW POINT, ETC.																		
	7 A. M.		2 P. M.		9 P. M.		7 A. M.						2 P. M.						9 P. M.					
1866.	Observed reading.	Attached thermometer.	Observed reading.	Attached thermometer.	Observed reading.	Attached thermometer.	Barometer corrected and reduced.	Dry-bulb thermometer.	Wet-bulb thermometer.	Dew Point	Tension of vapor.	Relative humidity.	Dry-bulb thermometer.	Wet-bulb thermometer.	Dew Point.	Tension of vapor.	Relative humidity.	Dry-bulb thermometer.	Wet-bulb thermometer.	Dew Point.	Tension of vapor.	Relative humidity.	Daily mean humidity.
1	28.80	48	28.80	60	28.90	57	.....	45	42	39	.289	78	57	52	48	.165	71	40	36	30	.246	68	.....
2	28.95	46	28.90	65	28.90	55	.....	37	34	29	.219	74	58	54	51	.281	67	47	44	41	.322	79	.....
3	28.85	43	28.70	54	28.70	60	.....	40	38	35	.246	84	58	54	51	.281	78	48	44	40	.334	73	.....
4	28.55	38	28.70	55	28.85	54	.....	48	44	40	.334	73	46	43	40	.310	79	35	33	30	.293	81	.....
5	28.95	34	28.90	51	28.90	53	.....	30	28	24	.166	79	51	47	43	.373	74	48	44	40	.334	80	.....
6	28.95	45	28.75	53	28.45	56	.....	43	40	36	.277	77	53	50	47	.402	81	59	47	44	.362	80	.....
7	27.95	59	28.25	48	28.40	43	.....	36	34	31	.211	82	32	30	27	.180	80	24	22	17	.130	75	.....
8	28.50	37	28.50	40	28.65	41	.....	24	22	17	.130	75	28	26	22	.153	78	24	22	17	.130	75	.....
9	28.70	38	28.80	44	28.80	44	.....	19	18	15	.105	85	38	34	28	.228	83	32	31	29	.180	90	.....
10	28.90	42	28.80	54	28.85	58	.....	23	20	18	.124	61	38	36	33	.228	83	37	34	29	.219	74	.....
11	28.80	45	28.80	44	28.80	48	.....	36	33	28	.211	73	43	42	36	.277	77	37	34	29	.219	74	.....
12	28.90	37	28.90	45	28.80	46	.....	32	30	27	.180	80	34	32	29	.195	80	30	29	27	.166	89	.....
13	28.45	38	28.35	40	28.25	40	.....	28	27	25	.153	80	32	30	27	.180	80	30	29	27	.166	89	.....
14	28.40	39	28.45	40	28.55	39	.....	24	22	17	.119	73	30	28	24	.166	79	26	24	20	.141	76	.....
15	28.70	34	28.85	46	28.95	48	.....	22	20	15	.104	73	34	32	29	.195	81	28	26	22	.153	78	.....
16	28.95	34	28.95	40	29.10	38	.....	24	23	21	.130	87	39	37	34	.166	88	25	23	18	.135	76	.....
17	29.15	30	29.05	38	28.75	40	.....	20	18	18	.110	72	26	25	23	.141	88	39	37	34	.237	83	.....
18	28.55	40	28.40	49	28.50	44	.....	38	37	36	.228	92	44	40	35	.288	70	36	35	34	.211	91	.....
19	28.35	38	28.40	48	28.50	38	.....	28	27	25	.153	86	30	29	25	.166	89	25	22	14	.135	63	.....
20	28.55	40	28.60	48	28.65	40	.....	24	22	17	.130	75	38	36	33	.228	83	30	29	27	.166	89	.....
21	28.65	36	28.70	39	28.75	35	.....	25	22	14	.135	69	34	33	30	.195	81	21	20	18	.114	86	.....
22	28.90	40	29.00	40	28.95	38	.....	24	22	17	.130	75	35	33	30	.203	81	24	22	17	.130	71	.....
23	28.65	40	28.45	44	28.35	38	.....	30	28	24	.166	79	40	39	38	.246	92	32	30	27	.188	80	.....
24	28.30	41	28.45	46	28.70	40	.....	34	33	29	.195	84	42	39	35	.266	77	33	32	30	.197	90	.....
25	28.80	36	28.60	43	28.40	38	.....	30	29	28	.173	90	40	34	24	.246	52	30	29	27	.166	89	.....
26	28.90	39	28.70	44	28.95	35	.....	28	27	25	.153	86	35	30	20	.203	54	24	22	17	.130	75	.....
27	28.95	25	28.95	35	28.80	30	.....	10	9	5	.071	80	25	21	10	.135	52	19	18	15	.105	85	.....
28	28.85	24	28.80	38	28.60	29	.....	12	11	7	.096	81	28	27	23	.153	83	26	24	21	.147	77	.....
29	28.70	35	28.60	46	28.50	45	.....	30	28	24	.166	79	42	41	40	.266	92	40	37	33	.246	76	.....
30	28.60	38	28.55	49	28.50	48	.....	32	30	27	.188	80	44	43	42	.288	92	38	36	33	.228	83	.....
Sum	860.80	.....	859.45	.....	860.75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mean	28.693	.....	28.648	.....	28.691	.....	28.68	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78

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METEOROLOGICAL RECORD FOR THE MONTH OF DECEMBER, 1886.

Place of observation: Lunenburgh, County of Essex, State of Vermont; latitude, 44°, 27′ 43″; longitude, 71°, 40′ 47″; height above the sea, 1210 feet.

Day of Month.	Ozone on Scale of 10.	THERMOMETER IN THE OPEN AIR.				RAIN AND SNOW.				CLOUDS.			WINDS.						Day of Month.
		7 A.M.	2 P.M.	9 P.M	MEAN	Time of begin'g of rain or snow.	Time of ending of rain or snow.	Total am't. rain and melted snow, in inches.	Av. depth of snow-fall in inches.	7 A. M. Lower Clouds. Kind, am't.	2. P. M. Lower Clouds. Kind, am't.	9 P. M. Lower Clouds. Kind, am't.	7 A. M. Direction	7 A. M. Force.	2 P. M. Direction	2 P. M. Force.	9 P. M. Direction	9 P. M. Force.	
1	5	30	28	24	... ..	.....	.....	.....	.....	10 C.	10 Cu.	0	W.	0	W.	0	N.W.	0	1
2	5	25	20	10	.....	6 A. M.	10 P. M.	60	6.00	10 N.	10 N.	10 N.	N.W.	0	N.W.	2	N.W.	5	2
3	5	0	12	3	.....	....	.....	.....	.....	5 Cu	2 C.	0	N.W.	3	N.W.	2	N.W.	1	3
4	4	-3	8	-14	.....	.....	... .	.....	.....	0	0	0	N.	0	W.	0	N. E.	0	4
5	4	-18	0	5	.....	.....	.....	.....	.....	0	0	5 C.	N.W.	0	W.	0	N.	0	5
6	4	-4	18	8	.....	.....	.....	.....	.....	0	0	0	W.	0	W.	0	N.E.	0	6
7	5	4	14	16	... ..	2 P. M.	11 P. M.	40	4.00	5 Cu.	10 N.	10 N.	N.E.	0	N.E.	1	W.	0	7
8	6	15	28	20	.....	.....	.....	.....	.....	10 C. cu.	8 Cu.	10 Cu.	N.	0	W.	0	N.	0	8
9	6	18	30	32	.....	.....	.....	....	.....	8 C.	10 Cu.	5 C.	W.	0	W.	0	W.	0	9
10	6	24	32	28	.....	.....	.....	.....	.....	0	0	0	N.	0	S.W.	0	S. W.	0	10
11	6	32	40	34	.....	.....	.....	.....	.....	0	5 C.	8 Cu.	N.W.	0	S.W.	0	W.	0	11
12	6	34	39	30	.....	.....	.....	.....	.....	10 C. s.	10 Cu.	10 C. cu.	N.	0	W.	0	E.	0	12
13	6	29	32	30	.....	10 A. M.	Night.	70	7.00	10 Cu.	10 N.	10 N.	W.	0	S.E.	0	N.W.	0	13
14	6	28	24	8	.....	.....	.....	.....	.....	8 Cu.	5 C.	0	N.W.	1	W.	3	W.	0	14
15	7	12	25	10	.....	4 P. M	.....	.....	.....	5 C.	8 Cu.	10 N.	N.	0	W.	2	N.W.	1	15
16	7	5	10	0	.....	.....	9 A. M.	40	4.00	10 N.	8 Cu.	0	N.W.	1	N.W.	1	N.	0	16
17	7	8	20	5	.....	.....	.....	.....	.....	10 Cu.	5 C.	10 Cu.	N.W.	0	W.	0	E.	0	17
18	7	12	25	15	.....	11 A. M.	.....	.....	.....	10 Cu.	10 N.	10 N.	N.E.	0	E.	0	N.	0	18
19	7	20	30	28	.....	.....	6 A. M.	60	6.00	10 N.	8 Cu.	5 C.	W.	0	S.W.	0	N.W.	0	19
20	7	10	25	18	.... .	.....	.....	.....	.....	5 C.	0	0	W.	0	W.	0	N.	0	20
21	6	15	30	25	.....	.....	.....	.....	.....	8 Cu.	0	5 C.	N.	0	W.	0	W.	0	21
22	6	20	32	32	.....	.....	.....	.....	.....	0	0	0	W.	0	S. W.	0	N.	0	22
23	6	10	28	24	.....	.....	.....	.....	.....	0	0	10 C.	N.	0	W.	0	S. W.	0	23
24	6	34	40	44	.....	5 A. M.	Night.	20	2.00	10 N.	10 N.	10 Cu.	S. E.	0	S W.	0	N.W.	3	24
25	6	25	20	-5	.....	.....	.....	.....	.....	0	0	0	N.W.	4	N.	2	W.	1	25
26	6	-4	10	15	.....	.....	.....	.....	.....	0	5 C.	8 Cu.	N.W.	0	W.	0	N.W.	0	26
27	5	10	18	4	....	Snow	Squall.	.....	.....	10 Cu.	10 N.	0	N.	1	N.W.	5	N.	2	27
28	5	2	20	11	.....	.....	.....	.....	.....	0	5 C.	5 C.	W.	0	W.	1	N.W.	0	28
29	5	-3	10	-10	.....	.....	.....	.....	.....	6	0	0	N.	0	W.	1	N.	0	29
30	5	-18	-3	-8	.....	.....	.....	.....	.....	0	0	0	N.W.	0	N.W.	0	N.	0	30
31	5	-2	20	24	.....	.....	.....	50	.....	5 C.	8 Cu.	10 N.	N.E.	0	N. E.	0	N.	0	31
Sums	....	370	685	429	.....	.....	.....	.....	29 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mean	.....	.....	.....	.....	15.42	.....	.....	3.40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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DATE.	BAROMETER.							HUMIDITY, DEW POINT, Etc.														
	7 A. M.		2 P. M.		9 P. M.			7 A. M.					2 P. M.					9 P. M.					
1886.	Observed reading.	Attached thermom'r.	Observed reading.	Attached thermom'r.	Observed reading.	Attached thermom'r.	Bar. cor'ted and reduced.	Dry-bulb thermom'r.	Wet-bulb thermom'r.	Dew point.	Tension of vapor.	Relative humidity.	Dry-bulb thermom'r.	Wet-bulb thermom'r.	Dew point.	Tension of vapor.	Relative humidity.	Dry-bulb thermom'r.	Wet bulb thermom'r.	Dew point.	Tension of vapor.	Relative humidity.	Daily mean humidity.
1	28.30	36	28.40	35	28.50	34	.....	30	29	27	.166	89	28	26	22	.153	78	24	22	17	.130	75	...
2	28.25	35	28.20	34	28 40	28	.....	25	23	18	.135	76	20	19	16	.110	86	10	9	5	.071	80	....
3	28.50	25	28.60	32	28.80	25	.....	0	-1	-7	.045	71	12	11	7	.078	81	3	2	-3	.052	74	....
4	28.90	20	29.00	22	29.10	18	.....	-3	-4	-11	.039	67	8	7	3	.065	79	-14	-15	-29	.023	46	....
5	29.15	10	29.20	20	29.15	24	.....	-18	-19	-43	.018	35	0	-1	-7	.045	71	5	4	-1	.057	76	...
6	29.00	20	29.00	28	29.05	30	.....	-4	-5	-13	.037	65	18	17	14	.101	85	8	7	3	.065	79	....
7	28.95	15	28.85	20	28.80	26	.....	4	3	-2	.054	75	14	13	10	.085	83	16	15	12	.092	84	....
8	28.75	22	28.80	25	28.85	30	.....	15	14	11	.088	83	28	26	22	.153	78	20	18	12	.110	72	....
9	29 00	24	29.10	30	29 15	28	.....	18	16	10	.101	70	30	28	24	.166	79	23	20	12	.124	61	....
10	29.05	30	29 00	35	28.80	32	.....	24	23	8	.130	50	32	30	27	.180	80	28	29	25	.153	89	....
11	28.90	35	29.00	40	29.05	36	.....	32	31	29	.180	90	40	36	30	.246	68	34	32	29	.195	81	....
12	29.05	40	29.00	45	28.90	39	.....	34	32	29	.195	81	39	56	32	.237	75	30	29	27	.166	89	....
13	28.50	35	28.30	46	28.15	35	.....	29	28	26	.159	89	32	31	29	.180	90	30	29	27	.166	89	....
14	28.25	34	28 35	40	28.50	30	.....	28	27	25	.153	89	24	23	21	.130	87	8	7	3	.065	79	..
15	28.50	28	28 55	34	28.60	30	.....	12	11	7	.078	81	25	23	18	.135	76	10	9	5	.071	80	....
16	28 48	20	28.50	28	28.60	20	.....	5	4	-1	.057	76	10	9	5	.071	80	0	-1	-7	.045	71	....
17	28.70	20	28.80	25	28.90	20	.....	8	7	3	.065	79	20	19	16	.110	86	5	4	-1	.057	76	....
18	28.70	22	28 60	32	28.55	25	.....	12	11	7	.078	81	25	24	22	.135	88	15	14	11	.088	83	...
19	28.65	29	28.75	38	28.85	34	.....	20	18	12	.110	72	30	29	27	.166	89	28	26	22	.153	78	....
20	28.85	30	28.90	40	28.95	30	.....	10	9	5	.071	80	25	24	22	.135	88	18	17	14	.101	85	....
21	28.80	30	28.85	38	28.60	28	.....	15	14	11	.088	83	30	29	27	.166	89	25	23	18	.135	76	...
22	28.95	32	29.00	40	28.05	30	.....	20	19	-16	.110	86	32	30	27	.180	80	22	20	16	.124	74	....
23	29.10	30	29.05	38	29.05	29	.....	10	8	-1	.071	60	28	27	25	153	89	24	22	17	.130	75	....
24	28.85	34	28.55	48	28.45	48	.....	34	32	29	.295	81	40	36	30	.246	68	44	42	40	.288	85	....
25	28.55	34	28 75	34	29.05	28	.....	25	24	22	.195	88	20	19	16	.110	86	-5	-6	-14	.035	64	....
26	29.00	30	28.90	35	28.80	32	.....	-4	-5	-13	.037	65	10	9	5	.071	80	15	14	11	.088	83	....
27	28.60	28	28 70	34	28.80	30	.....	10	9	5	.071	80	18	17	14	.101	85	4	3	-1	.057	76	....
28	28.80	25	28.85	32	28.85	25	.....	2	1	-5	.049	73	20	19	16	.110	86	11	10	6	.074	81	....
29	29.00	22	29.05	30	29.10	20	.....	-3	-4	-11	.039	67	10	9	5	.071	80	-10	-11	-22	.028	55	....
30	29.15	15	29.15	20	29.15	22	.....	-18	-19	-43	.018	35	-3	-4	-11	.039	67	-8	-9	-19	.031	59	....
31	29.10	20	29.00	35	28.75	30	.....	-2	-3	-10	.041	68	20	18	12	.110	72	24	22	17	.130	75	....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sums	892.33	.....	892.75	.....	892.30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mean	.....	.....	.....	.....	.....	.....	28.79	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	76

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SUMMARY FOR JANUARY, 1886.

Highest barometer during the month	29.50	on the	14th.
Lowest " " "	27.60	"	9th.
Meam " " "	28.79		
Highest temperature " "	40°	"	5th.
Lowest " " "	-20°	"	12th.
Mean " " "	15°		
Prevailing winds	N. W.		
Maximum velocity of force	$8\frac{1}{10}$ and 20 miles.		
Total rain-fall or melted snow	2.65		
No. of days on which 0.01 or more rain or snow fell			2
No. of days on which cloudiness averaged 8 or more on a scale of ten			11
Depth of snow, in inches, at close of month			22
Depth of snow-fall, in inches, during month			19

SUMMARY FOR FEBRUARY, 1886.

Highest barometer during the month	29.40		
Lowest " " "	27.90		
Mean " " "	28.73		
Highest temperature " "	46°		
Lowest " " "	-25°		
Mean " " "	15.39		
Prevailing winds	N. W.		
Maximum velocity or force	30 miles.		
Total rain-fall or melted snow	1.67		
No. of days on which 0.01 or more rain or snow fell			5
No. of days on which cloudiness averaged 8 or more on a scale of ten			9
Depth of snow, in inches, at close of month			10
Depth of snow-fall, in inches, during the month			13.25

SUMMARY FOR MARCH, 1886.

Highest barometer during the month	29.25		
Lowest " " "	28.05		
Mean " " "	28.59		
Highest temperature " "	50°		
Lowest " " "	-16°		
Mean " " "	25.24		
Prevailing winds	N. W.		
Maximum velocity of force	20 miles.		
Total rain-fall or melted snow	.90		
No. of days on which 0.01 or more rain or snow fell			4
No. of days on which cloudiness averaged 8 or more on a scale of ten			11
Depth of snow, in inches, at close of month			12
Depth of snow-fall, in inches, during the month			9

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SUMMARY FOR APRIL, 1886.

Highest barometer during the month	29.30
Lowest " " "	28.45
Mean " " "	28.94
Highest temperature " "	75°
Lowest " " "	28°
Mean " " "	44.08
Prevailing winds	N. W.
Maximum velocity of force	20 miles.
Total rain-fall or melted snow	.75
No. of days on which 0.01 or more rain or snow fell	3
No. of days on which cloudiness averaged 8 or more on scale of ten	6
Depth of snow in inches, at close of month	4

SUMMARY FOR MAY, 1886.

Highest barometer during the month	29.10
Lowest " " "	28.40
Mean " " "	28.75
Highest temperature " "	76°
Lowest " " "	40°
Mean " " "	55.26
Prevailing winds	N. W.
Maximum velocity of force	20 miles.
Total rain-fall or melted snow	2.37
No. of days on which 0.01 or more rain or snow fell	5
No. of days on which cloudiness averaged 8 or more on a scale of ten	7

SUMMARY FOR JUNE, 1886.

Highest barometer during the month	29.10
Lowest " " "	28.30
Mean " " "	28.71
Highest temperature " "	78°
Lowest " " "	40°
Mean " " "	59.87
Prevailing winds	W.
Maximum velocity or force	30 miles.
Total rain-fall or melted snow	1.70
No. of days on which 0.01 or more rain or snow fell	8
No. of days on which cloudiness averaged 8 or more on a scale of ten	7

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SUMMARY FOR JULY, 1886.

Highest barometer during the month	29.05
Lowest " " "	28·60
Mean " " "	28.81
Highest temperature " "	88°
Lowest " " "	52°
Mean " " "	66.32
Prevailing winds	N. W.
Maximum velocity of force	30 miles.
Total rain-fall or melted snow	2.32
No. of days on which 0.01 or more rain or snow fell	7
No. of days on which cloudiness averaged 8 or more on a scale of ten	3

SUMMARY FOR AUGUST, 1886.

Highest barometer during the month	29.15
Lowest " " "	28.15
Mean " " "	28.78
Highest temperature " "	85°
Lowest " " "	50°
Mean " " "	64.52
Prevailing winds	W.
Maximum velocity or force	20 miles.
Total rain-fall or melted snow	4.70
No. of days on which 0.01 or more rain or snow fell	11
No. of days on which cloudiness averaged 8 or more on a scale of ten	3

SUMMARY FOR SEPTEMBER, 1886.

Highest barometer during the month	29.35
Lowest " " "	28.60
Mean " " "	28.93
Highest temperature " "	86°
Lowest " " "	35°
Mean " " "	56.68
Prevailing winds	W. to N.
Maximum velocity or force	20 miles.
Total rain-fall or melted snow	3.98
No. of days on which 0.01 or more rain or snow fell	8
No. of days on which cloudiness averaged 8 or more on a scale of ten	7

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SUMMARY FOR OCTOBER, 1886.

Highest barometer during the month	29.25
Lowest " " "	28.60
Mean " " "	29.06
Highest temperature " "	72°
Lowest " " "	29°
Mean " " "	47.43
Prevailing winds	W.
Maximum velocity or force	30 miles.
Total rain-fall or melted snow	1.40
No. of days on which 0.01 or more rain or snow fell	7
No. of days on which cloudiness averaged 8 or more on a scale of ten	10

SUMMARY FOR NOVEMBER, 1886.

Highest barometer during the month	29.15
Lowest " " "	28.25
Mean " " "	28.68
Highest temperature " "	58°
Lowest " " "	10°
Mean " " "	33.30
Prevailing winds	N. W.
Maximum velocity or force	40 miles.
Total rain-fall or melted snow	3.90
Depth of snow, in inches, at close of month	18
Depth of snow-fall, in inches, during month	24.50

SUMMARY FOR DECEMBER, 1886.

Highest barometer during the month	29.20
Lowest " " "	28.15
Mean " " "	28.79
Highest temperature " "	44°
Lowest " " "	-18°
Mean " " "	15.42
Prevailing winds	N. W.
Maximum velocity or force	40 miles.
Total rain-fall or melted snow	3.50
No. of days on which 0.01 or more rain or snow fell	8
No. of days on which cloudiness averaged 8 or more on a scale of ten	9
Depth of snow, in inches, at close of month	21
Depth of snow-fall, in inches, during month	29

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OBSERVATIONS ON TEMPERATURE OF LUNENBURGH.

Latitude, 44° , 27′ 43″. Longitude, 71° 40′ 47″. Elevation, 1210 feet.

Year.	Average monthly Temperature in degrees and hundredths for forty years.												Yearly Means.
	Jan.	Feb.	Mar.	April	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	
1848	19.50	17.00	30 40	41.30	50.00	67.65	70.30	69.25	58.50	44.50	26.00	20.40	42.90
1849	10.70	14.50	30.00	40 50	53.70	58.90	69.60	54.75	56.40	40.90	30.40	19.50	39.99
1850	10.00	14.07	25.50	35.00	55.00	69.50	67.60	64.00	58.30	50.00	29.73	21.00	41.64
1851	20.50	14.22	31.75	39.16	57.00	62.50	64.25	70.00	51.50	40.00	25.80	19.00	41.31
1852	20.50	19.28	21.00	32.00	50.50	64 50	69.00	65.50	58.00	43.00	30.00	28.00	41.19
1853	22.00	12.70	23.50	38.00	54.00	63.50	69.75	67.00	56.50	43.50	28.70	23.75	41.91
1854	10.50	9.00	22.34	34.16	52.30	67.10	70.40	64.50	57.25	45.75	32.30	15.25	40.07
1855	21.70	14.30	29.20	39.60	40.80	63.70	67.20	68.25	60.00	43.75	30.00	21.00	41.63
1856	22.00	18.50	20.40	35.50	51.30	67.40	68.50	64.00	57.70	44.00	28.90	20.00	41.51
1857	14.20	20.00	24.50	32.70	50.60	65 30	60.80	62.30	52.00	42.50	31.00	19.50	39.62
1858	8.30	23.10	24.70	34.60	50.00	59.15	65.30	62.40	53.00	42.50	33.40	21.50	39.83
1859	17.75	19.00	25.50	33.00	51.50	63.00	64 50	67.00	57.00	39.50	34.00	14.00	40.48
1860	18.20	16.00	28.50	38.00	58.50	66.50	69.00	66.00	55.50	49.00	39.00	19.00	43.60
1861	19.50	22.00	27.00	41.50	48.50	63.25	68.00	66.00	54.00	45.00	32.00	21.00	42.31
1862	16.00	19.50	26.50	39.00	55.00	63.00	68.00	62.00	59.50	48.00	30.00	20.00	42.21
1863	24.00	19.00	19.20	36.10	59.20	64.30	70 20	70.00	56.00	47.00	26.70	18.40	42.51
1864	18.00	20.60	31.00	41.00	55.00	68.20	71.90	70.90	55.88	48.10	33.86	22.56	44.75
1865	14.80	19.06	33.80	40.97	49.21	67.30	60.84	70.82	56.55	37.48	34.56	24.46	42.48
1866	14.45	20.35	27.50	37.98	45.10	69.00	73.25	60.90	52.37	48.68	45.72	20.91	43.02
1867	9.62	23 52	24.61	39.10	49.34	65.97	70.06	64.83	49.37	44.93	30.05	10.90	40.19
1868	11.69	8.87	28.45	34.61	53.04	63.65	72.07	67.26	54.98	41.49	29.55	14.86	40.04
1869	19.27	20 00	19.67	38.80	51.91	61.78	68.19	63.83	62.07	43.30	30.53	22.03	41.78
1870	22.08	16.31	23.89	43.31	54.08	69.12	72.57	67.63	60.42	46.69	33.71	22.15	44.38
1871	13.74	17.42	34.45	42.00	53.99	64.92	68.18	66.86	55.21	47.75	26.69	17.27	42.37
1872	14.62	16.31	16.72	38.74	54.88	66.95	70.43	69.66	59.77	45 48	31.80	9.09	41.20
1873	12.69	15.20	24.31	38.69	51.85	62.17	69.66	65.48	57.00	47.10	23.37	19.97	40.62
1874	20.26	17.40	24.84	31.08	51.30	64 17	70.45	63 75	58.61	46.42	27.68	15.26	40.95
1875	5.96	9.79	21.77	33.47	52.06	61.43	64.96	66.73	51.96	41.22	24.05	18.44	37.66
1876	19.39	16.17	25.95	37.04	50.18	65.57	68.15	65.48	55.22	40.28	34.33	12.00	40.69
1877	9.78	24.10	27.70	42.40	52.48	63.99	68.96	66.84	58.71	43.83	36.86	24.36	43.38
1878	15.02	20.83	32.41	46.70	52.10	61.88	68.46	65.70	58.82	48.72	32.20	21.19	43.67
1879	13.08	13.00	25.84	35.80	54.73	60.82	66.43	60.92	54.05	50.27	31.61	21.79	40.69
1880	24.41	21.74	24.10	40.10	57.85	62.67	65.53	64.51	59.08	43.28	27.85	15.88	42.25
1881	9.03	18.25	32.64	37.77	56.79	57.50	65.72	66.32	62.90	44.16	32.00	28.45	42.62
1882	13.27	20.05	25.33	34.16	46.78	61.93	66.52	65.62	57.30	48.11	30.54	18.64	40.69
1883	9.87	15.00	16.83	36.90	52.07	65.56	66.12	63.41	55.95	41.51	34.33	17.43	39.66
1884	9.09	21.80	24.85	39.23	51.49	65.49	64.61	64.76	58.38	43.59	30.55	21.65	41.29
1885	15.39	8.75	15.63	41.07	62.79	61.70	66.16	61.41	53.27	45.73	35.63	22.97	40.89
1886	15.00	15.39	25.24	44.08	55.26	59.87	66.32	64.52	56.68	47.43	33.30	15.42	41.54
1887	13.32	15.27	22.00	35.92	59.35	64.80	76.66	64.87	58.00	43.60	32.51	22.12	41.91
Means.	15.48	17.18	25.47	38.02	52.80	64.14	68.11	65.40	56.59	44 70	31.28	19.35	41.60

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OBSERVATIONS OF TEMPERATURE AT LUNENBURGH, VT.

Observations made at Lunenburgh, Essex Co., Vt.; latitude 44° 27′ 43″; longitude 71°, 40′ 47″; altitude, 1210 feet; monthly and annual amount of rain and melted snow from 1848 to 1888, being a period of 40 years.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual rainfall.	Snow in year.	Inches in winter.
1848	2.68	4.75	3.60	1.10	2.72	1.84	4.80	3.82	1.10	5.84	3.38	5.95	41.00	71.00	71.00
1849	2.25	3.85	6.10	2.22	2.47	2.00	4.00	1.75	2.20	2.25	3.71	3.00	35.80	84.00	84.00
1850	2.90	3.95	4.50	2.00	3.50	1.75	3.90	4.00	2.05	4.90	3.50	3.05	40.00	67.00	52.00
1851	4.00	1.15	3.50	7.10	.85	3.60	4.18	1.25	2.80	3.00	1.50	.57	33.50	50.00	48.00
1852	2.75	3.75	4.10	5.25	5.80	4.20	2.75	2.00	3.25	3.75	.45	.95	39.00	68.00	86.00
1853	4.00	4.55	2.10	2.80	3.10	2.80	4.20	4.50	3.13	2.80	4.00	3.75	41.75	91.00	100.00
1854	4.80	3.90	3.25	2.10	2.20	2.50	1.10	.75	3.75	4.20	4.05	4.00	36.60	80.00	70.00
1855	1.40	2.25	4.25	3.75	4.70	5.80	3.20	2 50	3.25	2.20	2.00	2.95	38.25	90.00	83.00
1856	3.25	3.00	5.20	2.10	2.40	3.75	3.75	3.20	3.00	3.15	3.00	4.00	39.80	80.00	79.00
1857	2.60	2.90	4.50	3 00	2.80	3.25	3.50	3.00	2.95	4.18	2.50	2.07	37.25	69.00	69.78
1858	3.25	3.00	1.50	4.10	2.50	2.85	2.75	3.50	3.25	3.80	5.00	3.00	38.50	77.00	78.00
1859	1.07	2.05	4.25	1.25	2.75	4.00	2.25	3.06	4.50	2.50	2.85	4.77	35.30	51.75	58.00
1860	2.25	2.16	1.98	1.56	1.50	1.06	3.62	9.06	4.52	2.32	5.37	3.51	38.90	64.55	99.00
1861	3.20	3.00	2.95	5.85	6.75	4.00	6.00	1.75	5.00	4.62	2.18	1.70	47.00	83.50	147.00
1862	3.80	5.02	3.56	2.40	1.75	1.70	2.75	6.00	4.00	4.00	6.75	4.07	45.80	148.00	101.00
1863	5.45	1.40	4.70	2.85	4.50	1.50	8.70	2.90	3.05	3.60	2.25	5.10	46.00	92.00	51.00
1864	2.63	1.88	2.92	1.90	6.85	1.32	2.00	3.30	2.75	6.12	3.70	3.65	39.02	75.12	87.00
1865	3.35	1.70	5.13	3.35	6.55	2.75	3.92	1.00	4 62	3.35	2.95	1.02	39.69	69.00	41.10
1866	1.55	3.35	1.40	2.50	2.00	3.00	6.00	5.25	6.00	1.95	3.25	1.85	38.10	36.00	73.00
1867	2.05	4.30	2 60	2.70	9.47	3.75	3.33	3.75	2.00	1.50	2.45	1.75	39.65	78.50	68.00
1868	1.87	1.45	2.80	1.30	5.75	4.40	5.05	1.82	8.02	1.30	7.15	2.45	43.37	51.75	114.00
1869	4.30	4 12	4.45	2.05	2.85	5.00	2.75	2.50	2.60	8.10	2.21	3.02	43.95	91.25	100.00
1870	4.55	4.00	1.47	2.50	3.60	3.50	4.34	6.42	3.00	3.95	6.52	1.30	45.65	97.80	55.00
1871	3.15	2.10	3.65	5.72	3.62	2.12	4.35	7.35	2.30	3.90	1.00	3.70	42.96	60.50	95.00
1872	2.00	3.05	2.70	2.00	8.20	7.33	7.25	12.58	3.48	2.27	5.05	5.00	60.91	139.00	167.00
1873	3.85	3.35	4.50	2.65	2.64	2.00	3.95	2.50	4.75	5.45	2.22	2.65	40.51	136.20	117.00
1874	3.70	1.80	2.25	4.05	2.95	7.06	4.98	4.38	1.35	1.15	2.71	3.07	39.45	118.85	127.00
1875	3.60	4.03	3.00	2.86	3.73	5.70	2.55	3.45	4.35	5.26	2.92	1.40	42.84	86.45	102.00
1876	3.55	3.60	3.00	2.75	4.70	7.05	5.22	1.35	5.94	1.50	1.67	2.82	43.15	100.85	70.00
1877	2.15	.65	6.40	2.35	1.05	3.00	4.22	5.95	2.05	4.70	3.65	1.87	38.04	42.75	32.25
1878	1.65	.80	2.25	6.15	2.45	4.65	3.35	4.45	1.20	2.60	2.70	2.30	34.55	42.50	103.00
1879	3 45	2.75	3.15	2.70	1.45	5 80	5.00	4.67	3.78	2.20	4.18	4.30	43.43	108.00	71.75
1880	2.25	2.60	1.47	1.40	3.05	2.30	2.45	3.79	2.40	4.70	2.18	2.55	31.14	84.75	191.00
1881	2.90	1.70	2.60	1.00	4.55	2.20	3.09	2.75	2.45	4.85	5.19	4 92	38.20	97.50	117.00
1882	3.75	3.75	1.75	1.55	2.20	4.93	2.85	1 05	5.26	1.45	1.27	2.40	32.21	109.80	113.00
1883	2.10	3.65	2.40	1.30	4.00	4.34	4.80	1.18	2.90	4.50	2.83	2.60	36.60	116.50	116.00
1884	3.30	2.30	4.60	1 26	4.45	1.95	2.50	2.55	2.55	5.00	2.50	2.80	35.76	115.00	104.00
1885	3.40	2.35	2.25	.60	1.00	3.88	6.46	5.77	3.00	4.51	2.55	1.70	37.47	83.89	60.25
1886	2.65	1.67	.90	.75	2.37	1.70	2.32	4.70	3.98	1.40	3 90	3.40	39.74	98.75	141.50
1887	3.00	3.80	2.20	1.75	2.23	3.84	4.88	2.36	1.02	2.39	2 15	3.25	32.87	125.00	
Means.	3.01	2.87	3.25	2.67	3.55	3.51	3.96	3.70	3.34	3.53	3.24	2.95	39.58		

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ANNUAL SUMMARY FROM VOLUNTEER OBSERVER

Of Meteorological observations made by Hiram A. Cutting, at Lunenburgh, Vermont, for the year ending December 31, 1886.

MONTHS.	Mean Pressure.	TEMPARATURES.			Mean relative humidity.	Total Precipitation (Rain and Melted Snow.	Total snow fall.	REMARKS.
		Mean.	Max.	Min.				
1886.								
January	28.79	15.00	42	-22	70	2.65	19.00	
February	28.73	15.39	45	-25	73	1.67	13.25	Lightning and shower, 14th, 8 P. M.
March	28.59	25.24	49	-16	82	.90	9.00	Brilliant Auroras.
April	28.94	44.08	75	28	74	.75	4.00	
May	28.75	55.26	76	39	73	2.37		No frosts.
June	28.71	59.87	78	40	79	1.70		Thunder showers, but no frost.
July	28.81	66.32	88	52	80	2.32		Thunder showers, with slight frost, 12th and 13th, no damages.
August	28.78	64.52	85	50	80	4.70		Earthquakes, 2:20 A. M., 3d, jarring dishes, etc.
September	28.93	56.68	86	35	76	3.98		Frosts, 2d, 21st and 22d.
October	29.06	47.43	72	29	75	1.40		First flakes of snow, 16th.
November	28.68	33.30	58	10	78	3.90	24.50	Second and 5th, frosts; 7th, snow, squalls.
December	28.79	15.42	40	-18	76	3.40	29.00	Parhelia of sun, 30th, N. S. and E.
Sums	345.56	498.51	.....	.....	916	39.94	98.75	
Averages	28.79	41.54	.....	.....	76	3.31		

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TEMPERATURE AT ST. JOHNSBURY, VERMONT, 1886.

JANUARY.			FEBRUARY.		
Day of Month.	Max.	Min.	Day of Month.	Max.	Min.
1	35	29	1	12	8
2	34	25	2	3	-20
3	35	24	3	2	-5
4	40	30	4	-8	-17
5	47	34	5	-11	-27
6	33	8	6	-1	-29
7	-1	-6	7	12	-12
8	-3	-10	8	34	2
9	13	-10	9	35	3
10	5	-7	10	37	10
11	-1	-10	11	39	15
12	-22	-32	12	39	27
13	-6	-31	13	40	31
14	4	-22	14	42	32
15	12	-14	15	42	28
16	18	-5	16	25	20
17	27	-11	17	19	1
18	23	-4	18	24	17
19	18	-6	19	36	13
20	18	3	20	29	0
21	25	-5	21	31	-12
22	27	16	22	17	-14
23	10	-9	23	29	8
24	-9	-26	24	-1	-12
25	14	-22	25	25	-8
26	31	14	26	10	-4
27	26	0	27	-2	-14
28	33	22	28	5	-7
29	30	24			
30	25	18			
31	35	14			

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TEMPERATURE AT ST. JOHNSBURY, VERMONT, 1886.

MARCH.			APRIL.		
Day of Month.	Max.	Min.	Day of Month.	Max.	Min.
1	-9	-16	1	53	36
2	4	-10	2	38	30
3	13	2	3	34	21
4	24	12	4	33	12
5	26	20	5	41	20
6	27	18	6	34	28
7	20	-6	7	33	26
8	28	-3	8	34	25
9	22	16	9	51	15
10	20	-12	10	36	26
11			11	45	19
12			12	48	30
13			13	51	33
14			14	54	36
15			15	59	35
16			16	58	34
17			17	66	28
18	26	18	18	72	28
19	34	2	19	65	32
20	32	24	20	69	36
21	33	27	21	73	38
22	35	24	22	72	39
23	25	14	23	73	40
24	23	13	24	58	35
25	35	4	25	53	20
26	41	20	26	58	23
27	35	24	27	57	24
28	34	18	28	53	40
29	37	9	29	52	29
30	41	28	30	70	37
31	48	32			

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TEMPERATURE AT ST. JOHNSBURY, VERMONT, 1866.

MAY.			JUNE.		
Day of Month.	Max.	Min.	Day of Month.	Max.	Min.
1	71	29	1	72	33
2	69	31	2	70	44
3	66	30	3	68	52
4	65	42	4	66	35
5	67	50	5	69	38
6	65	41	6	73	46
7	66	34	7	72	42
8	48	42	8	65	47
9	55	36	9	72	39
10	55	29	10	71	49
11	47	37	11	67	41
12	65	40	12	67	34
13	64	40	13	54	45
14	68	40	14	53	48
15	55	40	15	58	45
16	51	44	16	70	55
17	56	40	17	76	60
18	58	27	18	56	49
19	78	34	19	66	31
20	66	50	20	75	35
21	60	43	21	76	41
22	70	37	22	77	52
23	70	43	23	78	55
24	60	36	24	62	54
25	48	37	25	66	55
26	42	36	26	73	50
27	60	57	27	61	52
28	61	41	28	73	44
29	70	33	29	71	35
30	73	52	30	70	39
31	64	40			

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TEMPERATURE AT ST. JOHNSBURY, VERMONT, 1886.

JULY.			AUGUST.		
Day of Month	Max.	Min.	Day of Month.	Max.	Min.
1	74	36	1	80	49
2	83	43	2	74	62
3	85	56	3	60	46
4	87	51	4	70	52
5	88	55	5	70	42
6	87	56	6	77	43
7	84	58	7	78	42
8			8	78	50
9			9	86	47
10			10	86	50
11			11	84	56
12			12	81	55
13			13	80	45
14			14	75	57
15	64	56	15	74	43
16	73	60	16	67	41
17	81	56	17	65	45
18	80	52	18	69	39
19	72	52	19	70	40
20	68	51	20	78	40
21	73	45	21	77	42
22	72	51	22	76	42
23	66	43	23	79	43
24	73	44	24	65	49
25	76	45	25	75	55
26	79	46	26	81	56
27	80	42	27	87	52
28	81	47	28	86	55
29	82	54	29	83	59
30	80	52	30	76	55
31	83	48	31	67	54

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TEMPERATURE AT ST. JOHNSBURY, VERMONT, 1886.

SEPTEMBER.			OCTOBER.		
Day of Month.	Max.	Min.	Day of Month.	Max.	Min.
1	60	46	1	50	23
2	81	56	2	45	26
3	87	52	3	55	20
4	86	55	4	60	25
5	83	59	5	61	36
6	76	55	6	63	28
7	67	54	7	65	29
8	60	46	8	65	32
9	70	52	9	72	34
10	77	58	10	67	40
11	68	52	11	69	44
12	65	38	12	64	43
13	60	39	13	52	42
14	63	35	17	50	40
15	65	39	15	57	45
16	54	44	16	35	27
17	75	52	17	37	14
18	65	52	18	45	30
19	55	22	19	51	18
20	58	41	20	62	22
21	51	31	21	53	44
22	52	24	22	59	26
23	52	21	23	50	30
24	63	40	24	45	16
25	60	30	25	49	32
26	62	46	26	43	32
27	71	55	27	38	31
28	62	56	28	51	36
28	59	46	29	55	38
30	62	35	30	47	38
			31	50	40

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TEMPERATURE AT ST. JOHNSBURY, VERMONT, 1866.

NOVEMBER.			DECEMBER.		
Day of Month.	Max.	Min.	Day of Month.	Max.	Min.
1	58	28	1	32	24
2			2	21	17
3			3	3	-2
4	37	37	4	0	-12
5	34	35	5	-5	-27
6	40	26	6	13	-14
7	38	25	7	12	-10
8	30	17	8	30	8
9	40	18	9	27	16
10	39	24	10	26	6
11	40	32	11	24	10
12	36	28	12	34	29
13	38	24	13	30	22
14	34	20	14	26	15
15	37	23	15	26	-3
16	28	18	16	5	-4
17	27	5	17	12	-10
18	46	27	18	20	-2
19	32	25	19	32	20
20	37	22	20	22	-6
21	34	24	21	15	-12
22	33	26	22	25	16
23	36	16	22	28	0
24			24	42	27
25	33	25	25	26	-6
26	26	21	26	12	-10
27	19	-7	27	20	4
28	27	-4	28	15	05
29	37	20	29	2	-5
30	36	25	30		
			31		

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BENNINGTON.

A record of the weather for 1886, at Bennington. The thermometrical observations were made at noon.

JANUARY.

Highest temperature..... 60° above.
Lowest temperature..... 10° below.

General prevalence of wind, southeast; 3 rain storms; 4 snow storms; first snow storm the 9th inst.; 2 cloudless days; 10 sunny days; rainfall, 2 inches; snowfall, 18 inches; generally damp.

FEBRUARY.

Highest temperature..... 58° above.
Lowest temperature..... 17° below.

West winds blew 14 days in succession; general prevalence of wind, west; 3 rain storms; 3 snow storms; rainfall. 1 inch; snowfall, 7 inches; 1 cloudless day; 7 sunny days; generally damp.

MARCH.

Highest temperature..... 60° above.
Lowest temperature..... 10° below.

General prevalence of wind, southeast; 2 rain storms; 3 snow storms; rainfall, ½ inch; snowfall, 5 inches; 8 sunny days; highest velocity of wind, 60 miles an hour.

APRIL.

Highest temperature..... 59° above.
Lowest temperature..... 25° above.

Five rain storms; 2 cloudless days; 9 sunny days; rainfall, 2½ inches; general prevalence of wind, south; generally dry.

MAY.

Highest temperature..... 72° above.
Lowest temperature..... 41° above.

Six rain storms; 11 sunny days; 3 cloudless days; rainfall, 5 inches; general prevalence of wind, southeast.

JUNE.

Highest temperature..... 84° above.
Lowest temperature..... 50° above.

Nine rain storms; 14 sunny days; 4 cloudless days; rainfall, 6 inches; general prevalence of wind, south.

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JULY.

Highest temperature..... 96° above.
Lowest temperature..... .... 57° above.

Four rain storms; 16 sunny days; 4 cloudless days; rainfall, 6 inches; generally dry; general prevalence of wind, south.

AUGUST.

Highest temperature..... ..... 98° above.
Lowest temperature..... ..... 66° above.

Four rain storms; 24 sunny days; 3 cloudless days; rainfall, 3 inches; general prevalence of wind, southeast.

SEPTEMBER.

Highest temperature..... .... 87° above.
Lowest temperature..... ..... 42° above.

Four rain storms; 18 sunny days; no cloudless days; rainfall, 2 inches; generally very dry; general prevalence of wind, southeast.

OCTOBER.

Highest temperature..... ..... 70° above.
Lowest temperature..... ..... 20° above.

Five rain storms; 12 sunny days; 1 cloudless day; rainfall, 2 inches; generally dry; general prevalence of wind, west.

NOVEMBER.

Highest temperature..... ..... 41° above.
Lowest temperature..... ..... 10° above.

One rain storm; 5 sunny days; 5 snow storms; rainfall, ½ inch; snowfall, 12 inches; generally dry; general prevalence of wind, west.

DECEMBER.

Highest temperature..... ..... 38° above.
Lowest temperature..... 2° below.

Three rain storms; no sunny days; 2 snow storms; rainfall, 3 inches; snowfall, 13 inches; general prevalence of wind, west.

RECAPITULATION.

Highest temperature..... ..... 98° above.
Lowest temperature..... ..... 17° below.
Total rainfall..... 36½ inches.
Total snowfall..... 52 inches.
Total number of rainstorms..... 50
General prevalence of wind, southeast.

H. C. DAY,
Observer, Bennington, Vt.

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THERMOMETRICAL REPORT FOR 1886,

TAKEN AT BETHEL, BY WM. R. ADAMS.

January—1, 30°, cloudy; 2, 28°, sun out bright, thawed fast; 3, 34°, clear, clouded up and rained; 4, 34°, rained a good deal; 5, 44°, rained all night, ice out; 6, 34°, snowed most of the day; 7, 6°, cloudy, 1 inch of snow; 8, 0°, cold day, hazed up at night; 9, 0°, snowing, about 6 inches fell; 10, -2°, cold day; 11, -2°, clear day, -20° at 9 p. m.; 12, 30° to -38°, cold day, 22° to -27° at night; 13, 18° to -22°, wind easterly; 14, 20° to -26°, clear, clouded, -10° at night; 15, 14° to -20°, pleasant day, -2° at night; 16, 4° to -8°, fine day, hazed up some; 17, 26°, snowing, cleared away; 18, 14°, fine day, 12° at night; 19, 14°, commenced snowing some, night 10 to 12°; 20, 26°, fine day and evening; 21, 16°, cloudy, snowed some; 22, 26° fine day; 23, 18°, grew cold, 0 at 6, -17° at 10; 24, -8°, cloudy; 25, 10°, chilly day; 26, 18°, fine day, m. 26° at night; 27, 20°, cloudy; 28, 30°, rainy; 29, 34°, rainy; 30, 26°, snowing; 31, 22°, fine day.

February—1, 20°, grew cold, 0 at night; 2, 18 to 20-, fine day; 3, 0, fine day, 0 at night; 4, -10°, windy, -10° at night; 5, 25 to -30°, fine day, -8° at night; 6, 16 to -20°, fine day; 7, 8°, fine day; 8, 18°, clear, windy, mer. 20° at night; 9, 26°, warm day; 10, 16°, warm, wind S. E.; 11, 33°, cloudy, wind S.; 12, 34°, rained in night; 13, 36°, rained in night, also most of day; 14, 40°, mostly clear, warm day; 15, 40°, rained a good deal, warm day; 16, 26°, snowed a little; 17, 10°, mostly clear; 18, 16°, snowed some; 19, 26°, warm day, rained in evening; 20, 34°, showed a little in night; 21, 0, clear: 22, 2°, fine day; 23, 30°, snowing a little; 24, 2°, pleasant day; 25, 10°, clear, clouded up soon and snowed 7 inches; 26, 26°, snowing; 27, 8 to -10°, wind blew hard all night; 28, 0, wind still blowing; -10°, 29, wind still blowing.

March—1, 10-, clear, windy as ever; 2, 0, cloudy, snowed a little, clear evening; 3, 0, clear, fine day; 4, 15°, fine day; 5, 24°, cloudy day, cloudy evening; 6, 22°, partly clear, fine day; 7, 6°, clear, fine day; 8, 14°, snowing; 9, 24°, snowing, 2 or 3 inches; 10, 2°, clear, fine day; 11, 4°, clear fine day; 12, 35°, cloudy, snowed all day, melted fast; 13, 36°, cloudy, snowed all day, cooler; 14, 22°, clear, fine day; 15, 22°, clear, partially; 16, 34°, storming, sleet; 17, 26°, some cloudy, fine evening; 18, 22°, mostly clear; 19, 17°, clear, clouded up, snowed; 20, 30°, storming; 21, 32°, storming, sleet; 22, 32°, cloudy, stormed most of day; 23, 30°, cloudy; 24, 20°, cloudy, cleared away; 25, 20°, cloudy, mer. 46 at h.; 26, 40°, clear; 27, 24°, clear mostly, clouded up; 28, 24°, clear, same all day; 29, 20°, cloudy, partly, rained; 30, 34°, cloudy, rained; 31, 36°, cloudy, rained.

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April—1. 52°, cloudy; 2, 40–, cloudy, cooler; 3, 26°, cloudy, partly; 4, 20°, cloudy, sun came out; 5, 20°, fine day; 6, 34°, snowing, rained; 7, 34°, cloudy, snow 2 or 3 inches; 8, 32°, snowing; 9, 18°, clear; 10, 36°, clouded up; 11, 24°, clear; 12, 34°, cloudy; 13, 40°, cloudy; 14, 42°, cloudy; 15, 34°, fine day; 16, 40°, fine day; 17, 36°, heavy fog, sun out bright; 18, 42°, clear; 19, 40°, fine day, warm, m. up to 85°; 20, 50°, cloudy, sun came out; 21, 45°, clear mostly, rainy; 22, 48°, clear mostly; 23, 54°, clear, fine day, m. up to 85; 24, 56°, cloudy; 25, 34°, clear; 26, 36°, clear; 27, 30°, rain in evening; 28, 34°, cloudy, rained in evening; 29, 34°, cloudy, sun out in afternoon; 30, 32°, fine day.

May—1, 34°, clear; 2, 40°, fine day; 3, 34°, fine day; 4, 34, cloudy; 5, 38°, fine day; 6, 50°, fine day; 7, 42°, fine day; 8, 50°, cloudy, very rainy day; 9, 38°, windy; 10, 34°, fine day; 11, 48°, raining; 12, 46°, cloudy; 13, 50°, cloudy; 14, 48°, clear, cold at night; 15, 50°, rain; 16, 46°, cold day; 17, 46°, cloudy, rained a little; 18, 32°, partly cloudy; 19, 48°, partly cloudy, warmer; 20, 50°, partly cloudy; 21, 46°, clear; 22, 48°, cloudy, rained; 23, 46°, clear, warm, cloudy; 24, 42°, clear, warm; 25, 42°, raining hard; 26, 44°, cloudy, rained a good deal; 27, 42°, clear mostly, rained in afternoon; 28, 42°, cloudy, rained; 29, 42°, clear, fine day; 30, 42°, fine day; 31, 44°, clear, clouded up some.

June—1, 46°, clear; 2, 50°, clear, clouded up, rained some; 3, 50°, fine day, warmer; 4, 42°, fine day, cold at night; 5, 44°, clear, fine day; 6, 58°, clear; 7, 56°, warm day; 8, 50°, fine warm day; 9, 46°, fine warm day; 10, 62°, fine warm day; 11, 56°, fine warm day; 12, 44°, fine warm day; 13, 54°, rainy all day; 14, 54°, cloudy, rained; 15, 52°, some cloudy; 16, 56°, cloudy, fine evening; 17, 54°, cloudy; 18, 66°, grew cold; 19, 42°, clear; 20, 46°, clear; 21, 44°, cloudy; 22, cloudy; 23, cloudy; 24, cloudy, rained; 25, cloudy; 26, rainy; 27, rainy; 28, fine day; 29, cold; 30, 44°, fine day.

July—1, 44°, clear; 2, 42; 3, 40°, fine day; 4, 42°, fine day, cold at night; 5, 44°, clear; 6, 55°, very hot day, hot at night; 7, 78°; 8, 52°, clear; 9, 48°, hazy; 10, 56°, cloudy, rained; 11, 50°, mostly clear; 12, 44°, fine day, frost in some places; 13, 46°, fine day; 14, 48°, fine day; 15, rainy and warm; 16, rainy, some thunder; 17, fine day; 18, 50°, fine day; 19, cloudy, rained, thunder; 20, 48°, wet, cold day; 21, 50°, cloudy; 22, 58°, cloudy, mostly clear day; 23, 48°, clear, fine day; 24, 46°, clear, fine day; 25, 48°, clear, fine day; 26, 54°, rainy all day; 27, rainy; 28, 50°, nice day; 29, nice day; 30, nice day; 31, 52°, fine warm day.

August—1, 68°, warm day, rained; 2, 68°, warm day; 3, 54°, rain, cold day; 4, 58°, windy; 5, 46°, clear, warmer; 6, 52°, clear; 7, 54°, clear; 8, fine day; 9, fine day; 10, dry and

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hot; 11, cloudy, rained some; 12, cloudy some, fine day; 13, 50°, fine day; 14, raining; 15, pleasant, cool wind; 16, 44°, hazed up and grew warmer; 17, 52°, clouded some; 18, 48°, mostly clear; 19, 54°, fine day; 20, 50°, fine day; 21, 50°, heavy fog, fine day; 22, 50°, heavy fog, fine day; 23, 48°, fine day; 24, 56°, partly clouded, rained; 25, 54°, warm day; 26, 58°, heavy fog, hot; 27, 56°, heavy fog, hot, mer. 95°; 28, 64°, hot day; 29, 58°, hot day; 30, 65°, clouded, a little cooler; 31, 58°, cloudy, rained a little.

September—1, 50°, fine day; 2, 40°, heavy fog, frost on hills; 3, 44°, fine day, mer. 54° at night; 4, 50°, heavy fog, fine day; 5, 50°, heavy fog, fine day; 6, 50°, heavy fog, fine day; 7, 56°, heavy fog, fine day; 8, 54°, heavy fog, fine day; 9, fine day, very warm; 10, fine day; 11, fine day; 12, fine day; 13, cooler, growcold fast, mer. 42°; 14, raining; 15, 50°, foggy; 16, raining, rainy day, mer. 46°; 17, 58°, mostly clear; 18, 48°, fine day, clear and cool; 19, 44°, windy, thunder shower; 20, 42°, cold, disagreeable day, high winds; 21, 38°, some frost, pleasant, mer. 44°; 22, 30°, ground frozen, fine day; 23, 40°, commenced to rain, 24, 46°, fine day; 25, 58°, fine, clouded up and rained; 26, 58°, fine, clouded up and rained; 27, 56°, fine day; 28, 50°, rainy; 29, 44°, fine day; 30, 40°, fine day.

October—1, 50°, cloudy day; 2, 28°, rain and hail; 3, 28°, frost, fine day; 4, 33°, foggy, fine day; 5, 52°, cloudy, warm, fine day; 6, 40°, heavy fog, m. up to 60°, fine day; 7, 34°, clear, fine day; 8, 38°, fine day, m. up to 90°; 9, 42, heavy fog, fine day; 10, 50°, heavy fog; 11, 50°, fine day; 12, 46°, cloudy, fine day; 13, 58°, cloudy all day; 14, 50°, cloudy, rained; 15, 62°, raining, cooler at night; 16, 33°, snowing; 17, 18°, clear, clouded up; 18, 38°, cloudy, rained; 19, 24°, fine day, mer. 42° at night; 20, 38°, fine day, warmer; 21, 60°, rained, cleared away soon; 22, 28°, fine day, warmer, mer. 50° at night; 23, 42°, fine day, cool wind; 24, 22°, heavy white frost; 25, 34°, cloudy, rained a little; 26, 24°, cloudy; 27, 40°, raining; 28, 42°, raining, grew warmer; 29, 54°, raining all night and day; 30, 46°, cloudy, rained all day; 31, 48°, raining hard.

November—1, 42°, clear, fine day; 2, 32°, fine day; 3, 40°, rained in night, fine day; 4, 52°, fine at night; 5, 26°, clear, fine day, cloudy; 6, 42°, cloudy, rained; 7, 32°, snowing fast; 8, 24°, cloudy; 9, 32°, thawed some; 10, 30°, cloudy; 11, 38°, cloudy some all day; 12, 36°, cloudy, grew cold; 13, 27°, snowing fast all day and night, 8 inches; 14, 28°, snowing, mer. 26 at night; 15, 30°, clear, fine day; 16, 26°, clear, grew cold, mer. 10 at night; 17, 12°, cloudy, snowed, turned to rain; 18, 34°, raining, sun out hot; 19, 28°, snow and sunshine; 20, 32°, fine day, cloudy at night; 21, 36°, fine day; 22, 38, fine day; 23, 44°, raining, warm; 24, 46°, clear, clouded up; 25, 34°, cloudy; 26, snowing, 10 inches fell; 27, 2°, heavy white frost; 28, 4°, heavy white frost, warmer; 29, 28°, cloudy, sun out, hot some; 30, 36°, cloudy, sun out, hot some.

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December—1, 32°, cloudy all day; 2, 22°, snowing; 3, 2°, grew cold through day; 4, -12°, fine day; 5, -20°, fine cool day, snowed; 6, -14°, fine day, -2° at 9 p. m.; 7, -2°, cloudy, snowed a little; 8, -4°, grew warmer; 9, -30°, fine day; 10, 10°, fine day; 11, 34°, fogy, clouded, rain; 12, 34°, fogy, fine day; 13, 32°, cloudy, rain and snow; 14, 36°, growing cold, mer. 12° at 9 p. m.; 15, 24°, clouded up, snowed; 16, 4°, cloudy, snowed 4 inches; 17, 12°, fine day, mer. -2° at 9 p. m.; 18, 4°, snowed; 19, 12°, nice day; 20, 8°, mer. -4° at 9 p. m.; 21, 2°, heavy frost; 22, 24°, wind S., fine day, mer. 26° at 9 p. m.; 23, 14°, heavy white frost; 24, 34°, raining most of the day; 25, 24°, snowing at n.; 26, 2°, cloudy; 27, 12°, commenced to snow soon; 28, 4°, 29, -4°, cloudy; 30, -12°, fine day, some cloudy; 31, 4°, cloudy, snowed some.

THERMOMETRICAL OBSERVATIONS, 1886.

BY S. E. RENNEY, M.D., *North Bennington.*

Observations at Sunrise—January—1, 35°, moist, rain; 2, 24°, fair; 3, 38°, moist, rain; 4, 42°, moist, rainy; 5, 53°, moist, rainy; 6, 30°, fair; 7, 5°, fair; 8, 0°, fair; 9, 8°, moist, snow 6 inches; 10, 2°, fair; 11, 0°, fair; 12, 23–, fair; 13, 16–, fair; 14, 12–, fair; 15, 3–, fair; 16, 7°, fair; 17, 32°, cloudy, snow 2 inches; 18, 9°, fair; 19, 23°, cloudy, snow 8 inches; 20, 20°, fair; 21, 29°, cloudy, rain ½ inch; 22, 23°, fair; 23, 12°, fair; 24, 6–, fair; 25, 20°, fair; 26, 24°, fair; 27, 34°, fair; 25, 20°, fair; 26, 24°, fair; 27, 34°, fair; 28, 31°, fair; 29, 23°, fair; 30, 20°, fair; 31, 6°, cloudy, snow 4 inches. For month, 10 days with rain or snow; snow-fall, 20 inches; mean temperature at sunrise, 16°.

February—1, 14°, cloudy; 2, 10–, fair; 3, 4–, fair; 4, 9–, 5, 17–, fair; 6, 17–, fair; 7, 14°, fair; 8, 12°, fair; 9, 18°, fair; 10, 35°, cloudy, rain ½ inch; 11, 36°, cloudy; 12, 41°, fair; 13, 47°, cloudy, rain; 14, 39°, fair; 15, 34°, fair; 16, 25°, fair; 17, 15°, fair; 18, 28°, fair; 19, 38°, cloudy, rain; 20, 32°, cloudy, snow 1 inch; 21, 6–, fair; 22, 14°, fair; 23, 34°, fair; 24, 8°, fair; 25, 22°, fair; 26, 22°, cloudy, snow 4 inches; 27, 6–, fair; 28, 2–, fair. Mean temperature, 16½; snow-fall, 5 inches; 6 days of snow and rain.

March—1, 5–, fair; 2, 2°, fair; 3, 10°, fair; 4, 20°, fair; 5, 24°, fair; 6, 21°, fair; 7, 24°, fair; 8, 28°, fair; 9, 29°, cloudy, snow 2 inches; 10, 17°, cloudy; 11, 11°, fair; 12, 32°, fair; 13. 33°, fair; 14, 30°, fair; 15, 31°, fair; 16, 40°, fair; 17, 29°, fair; 18, 31°, fair; 19, 29°, cloudy, snow 2 inches and rain; 20, 35°, fair; 21, 37°, fair; 22, 34°, cloudy, snow 2 inches; 23, 31°, cloudy, snow 3 inches; 24, 21°, fair; 25, 28°, fair; 26, 39°, fair; 27, 30°, fair; 28, 30°, fair; 29, 30°, fair; 30, 40°, fair; 31, 58°, fair. Average temperature at sunrise, 27°; snow-fall, 7 inches; cloudy days, 5.

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April—1, 48°, fair; 2, 38°, fair; 3, 30°, fair; 4, 24°, fair; 5, 32°, fair; 6, 38°, high winds; 7, 37°, cloudy; 8, 33°, cloudy, snow 1 inch; 9, 30°, fair; 10, 38°, fair; 11, 31°, fair; 12, 40°, cloudy, rain; 13, 54°, fair; 14, 53°, fair; 15, 50°, fair; 16, 49°, fair; 17, 48°; 18, 52°; 19, 56°; 20, 50°; 21, 56°; 22, 55°; 23, 55°; 24, 60°; 25, 45°; 26, 49°; 27, 55° cloudy, rain; 28, 46°, cloudy; 29, 49°, cloudy, showers; 30, 50°, fair. Average temperature at sunrise 45°; cloudy and stormy, 7.

May—1, 40°, fair, slight frost; 2, 56°, fair; 3, 53°, fair, trees leaved; 4, 52°; 5, 59°, cloudy, rain; 6, 53°, fair; 7, 52°, fair; 8, 52°, cloudy, rain; 9, 52°, fair; 10, 55°, cloudy, rain; 11, 54°, fair; 12, 46°, fair; 13, 51°, fair; 14, 56°, fair; 15, 55°, cloudy, rain; 16, 52°, fair; 17, 44°, fair; 18, 50°, fair; 19, 59°, fair; 20, 54°, fair; 21, 63°, fair; 22, 54°, fair; 23, 65°, fair; 24, 56°, fair; 25, 54°, cloudy, rain; 26, 41°, fair, slight frost; 27, 56°, cloudy, rain; 28, 50°, fair; 29, 58°, fair; 30, 60°, fair; 31, 56, fair. Average temperature at sunrise, 53½°; rain-falls on 6 days.

June—1, 60°, fair; 2, 61°; 3, 66°, cloudy, rain; 4, 59°, fair; 5, 60°, fair; 6, 65°, fair; 7, 64°, fair; 8, 62°, fair; 9, 56°, fair; 10, 62°, fair; 11, 62°; 12, 65°; 13, 60°, cloudy, rain; 14, 60°, fair; 15, 56°, cloudy, rain; 16, 65°, fair; 17, 65°; 18, 63°, cloudy, heavy rain; 19, 52°, fair; 20, 60°, fair; 21, 62°, fair; 22, 60°, fair; 23, 62°, fair; 24, 54°, fair; 25, 61°, cloudy, rain; 26, 65°, fair; 27, 63°, fair; 28, 61°, fair; 29, 63°, fair; 30, 55°, fair. Average temperature at sunrise for month, 61°; cloudy and rainy days, 5.

July—1, 61°, fair; 2, 55°, fair; 3, 65°, fair; 4, 70°, fair; 5, 65°, fair; 6, 70°, fair; 7, 68°, fair; 8, 72°, fair; 9, 62°, fair; 10, 62°, cloudy, rain; 11, 70°, cloudy; 12, 60°, fair; 13, 62°, fair; 14, 68°, fair; 15, 68°, cloudy, rain; 16, 69°, fair; 17, 68°, fair; 18, 68°, cloudy, rain; 19, 62°, fair; 20, 65°, fair; 21, 60°, fair; 22, 62°, fair; 23, 65°, fair; 24, 62°, fair; 25, 61°, fair; 26, 68°, cloudy, rain; 27, 70°; 28, 62°, fair; 29, 70°, fair; 30, 71°, cloudy, rain; 31, 66°, fair. Average temperature at sunrise, 66°; number of cloudy and wet days, 5.

August—1, 68°, cloudy, rain; 2, 72°, fair; 3, 57°, fair; 4, 58°, fair; 5, 56°, fair; 6, 59°, fair; 7, 62°, fair; 8, 66°, fair; 9, 61°, fair; 10, 66°, fair; 11, 66°, cloudy, rain showers; 12, 57°; 13, 72°, cloudy, rain; 14, 67°, fair; 15, 65°, fair; 16, 56, cloudy; 17, 63°, fair; 18, 52°, fair; 19, 56°, fair; 20, 56, fair; 21, 58°, fair; 22, 62° fair; 23, 52°, fair; 24, 60°, fair; 25, 68°, fair; 26, 60°, fair; 27, 58°, fair; 28, 58°, fair; 29, 65°, fair; 30, 70°, fair; 31, 71°, fair. Average temperature at sunrise, 62°; cloudy and rainy days, 4.

September—1, 52°, fair; 2, 45°, fair; 3, 55°, fair; 4, 55°, fair; 5, 55°, fair; 6, 52°, fair; 7, 62°, fair; 80° at 2 p. m.; 8, 70°; 84° at 2 p. m.; 9, 63°, fair; 83° at 2 p. m.; 10, 65°; 84° at 2 p. m; 11, 70°, fair; 12, 65°, cloudy, rain; 13,

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48°; 14, 56°; 15, 52°, cloudy, rain; 16, 60°, cloudy; 17, 70°, fair; 18, 52°, cloudy, rain; 19, 56°, fair; 20, 55°, fair; 21, 42°, fair; 22, 40°, fair; 23, 48, cloudy, rain; 24, 52°, fair; 25, 50°, fair; 26, 60°, fair; 27, 63°, cloudy, hard rain; 28, 60°, cloudy, rain; 29, 55°, fair; 30, 42°, fair. Average temperature at sunrise, 55°; cloudy and rainy days, 6.

October—1, 47°, fair; 2, 34°, fair and frost; 3, 38°, fair; 4, 36°, fair; 5, 48°, cloudy; 6, 45°, fair; 7, 38, fair; 8, 42°, fair; 9, 45°, fair; 70° at 2 p. m.; 10, 52°, fair; 71° at 2 p. m.; 11, 48°; 65° at 2 p. m.; 12, 52, cloudy, rain; 13, 50, fair; 14, 52°, fair; 15, 63°, fair; 16, 36°, fair; 17, 23°, fair; 18, 43°, fair; 19, 35°, fair; 20, 53°, fair; 21, 56°, fair; 22, 35°, fair; 23, 38°, fair; 24, 35°, fair; 25, 45°, cloudy, rain; 26, 42°, fair; 27, 42°, cloudy, heavy rain; 28, 44°, fair; 29, 50°, fair; 30, 48°, fair; 31, 49°, fair. Average temperature at sunrise, 48°; rainy days, 4.

November—1, 43°, fair; 2, 36°, fair; 3, 42°, fair; 4, 46°, fair; 5, 30°, fair; 6, 44°, cloudy, rain; 7, 29°, cloudy, snow 4 inches; 8, 26°, fair; 9, 30°, fair; 10 34°, fair; 11, 41°, fair; 12, 36°, fair; 13, 35, cloudy, snow and rain; 14, 26°, fair; 15, 33°, fair; 16, 26°, fair; 17, 34, fair; 18, 34, cloudy, rain; 19, 36°, cloudy; 20, 33°, fair; 21, 36°, fair; 22, 26°; 23, 38°, cloudy, rain; 24, 43°, fair; 25, 34°, fair; 26, 27°, cloudy, snow 5 inches; 27, 26°, fair; 28, 14°, fair; 29, 36°, cloudy, snow 3 inches; 30, 34°, fair. Average temperature at sunrise, 34½°; stormy days, 7; snow-fall. 12 inches.

December—1, 24°, fair; 2, 14°, cloudy, snow 3 inches; 3, 0°, fair; 4, 2–, fair; 5, 2–, fair; 6, 2°, fair; 7, 10°, fair; 8, 7°, cloudy, snow 2 inches; 9, 32°, fair; 10, 12°, fair; 11, 16°, fair; 12, 34°, fair; 13, 36°, cloudy, rain; 14, 33°, fair; 15, 32°, cloudy, snow 2 inches; 16, 7°, fair; 17, 2°, fair; 18, 29°, cloudy, snow 1 inch; 19, 34°, fair; 20, 22°, fair; 21, 12°, fair; 22, 28°, fair; 23, 22°; 24, 49°, cloudy, rain; 25, 24°, fair; 26, 10°, fair; 27, 20°, fair; 28, 11°, fair; 29, 12°, fair; 30, 2–, fair; 31, 26°, fair; Average temperature at sunrise, 17°; stormy days, 6; snow-fall, 8 inches.

SYNOPSIS OF THE WEATHER IN TOWNSHEND, 1886,

— BY HENRY B. KENYON. —

January.—1, Clear and very warm for the season; 2, warm, ice melting, sleighing spoiled; 3, cloudy and foggy all day; 4, cloudy and heavy fog all day and night; 5, cloudy and warm; 6, cleared away last night, grew cold all night and day, wind N. W.; 7, clear and very cold; 8, clear and cold; 9, very cold, snowed all day, snow came 10 inches deep; 10, clear and cold; 11, clear and very cold; 12, very cold all day, ther. 10° to 30° below zero; 13, very cold, clear, ther. 14° below zero, 24 to 30 in neighborhood; 14, 12° below in morning, warmer at night; 15, clear and cold but warmer,

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14° above in evening; 16, warmer and pleasant; 17, windy and cold again; 18, warmer; 19, snowed all day, snow came 10 inches deep; 20, pleasant; 21, cold and stormy; 22, cloudy and stormed part of the day; 23, clear and cold; 24, very cold, ther. at zero; 25, ther. 8° below in morning, rose to 18° above at night, snowed slowly all day; 26, warmer and pleasant; 27, growing warmer, wet and cloudy at night; 28, snow melting and deep slush at night; 29, cloudy and stormy; 30, cloudy, snowed in morn and at night; 31, cleared away in forenoon, snowed again at night.

February,—1 to 4, clear and cold; 5, clear, ther. 12° below in morning, 10° below at night; 6, 10° below in morning, grew warmer, wind changed to S. E.; 7, warmer, temp. 30° above; 8, clear, warm and pleasant; 9, clear and warm, snow melting; 10, clear and pleasant, snow melting; 11, cloudy, snowed in evening; 12, cloudy and wet, snow melting; 13, rained hard all last night and part of forenoon; 14 and 15, cloudy and warm; 16, windy and cold, cleared away last night; 17, clear and cold; 18, clear and pleasant; 19, cloudy, rained at night; 20, windy, grew cold all day; 21, cold and cloudy; 22, clear and pleasant; 23, clear and cold; 24, pleasant, cold; 25, began to snow at 10 A. M., and snowed all day, about 6 inches fell; 26, very tedious, wind blew very hard from the N. W., snow drifted; 27, very windy and cold; 28, clear, windy very cold.

March,—1, very windy and cold, ther. 6° below, (awful weather); 2, very windy and cold, wind N. W.; 3, cold but warmer; 4, warmer; 5, pleasant; 6, clear and cold; 7, pleasant; 8, clear and cold; 9 to 11, pleasant; 12, cloudy, snowed in afternoon; 13, cloudy; 14, clear and cold; 15, cloudy; 16 and 17, pleasant; 18, clear in morning, clouded up and snowed in evening; 19, cloudy and wet; 20, cloudy and wet all day, snow 3 inches deep, ground muddy under snow; 21, cloudy and stormy; 22, cloudy and cold; 23, cold; 24, clear and cold; 25 and 26, pleasant; 27 pleasant morning, rained in evening; 28, very pleasant; 29, pleasant in morning, rained in evening; 30, cloudy and raining all day; 31, cloudy and raining.

April,—1, clear, windy; 2, pleasant, windy; 3, clear and pleasant; 4 and 5, pleasant; 6, stormed all day, wind N. E.; 7, cloudy, snowed slowly; 8, cleared away in forenoon, snow melting fast; 9, clear and pleasant, snow nearly all melted away; 10, pleasant; 11, pleasant, snow all gone; 12 pleasant; 13, April showers all day; 14 and 15, clear and warm; 16, pleasant, very muddy; 17, pleasant; 18, clear and warm; 19, pleasant and warm, ther. 80°; 20, warm; 21, very warm; 22, clear and warm; 23, clear and warm, ther. 87° in shade; 24, cloudy, cooler; 25, clear and pleasant; 26, 27 and 28, pleasant; 29, rained in morning, cool; 30, cool.

May,—1, 2 and 3, pleasant; 4, pleasant, warm; 5, pleasant, warm day; 6 and 7, pleasant; 8, rained hard all day; 9, clear and very pleasant; 10, pleasant in morning, rained in evening; 11, cloudy and rainy; 12, cleared away pleasant; 13, cloudy; 14, pleasant; 15, cloudy, rained at night; 16, cloudy, showers at night; 17, pleasant,

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cool; 18, pleasant; 19, clear and pleasant; 20 to 24, pleasant; 25, rained in forenoon; 26, cold and windy; 27, cloudy and windy; 28 and 29, pleasant; 30, clear and warm; 31, pleasant.

June,—1, warm and pleasant; 2 to 4, pleasant; 5, clear and pleasant; 6 to 8, clear and warm; 9 and 10, warm; 11, clear and warm; 12, clear, dry and hot; 13, cloudy and rainy all day; 14 and 15, cloudy and rainy; 16, cleared away warm; 17, very hot, hard showers at night; 18, clear and cool; 19 pleasant and warm; 20, pleasant; 21, clear and warm; 22, pleasant; 23 to 25, cloudy and rainy; 26, cleared away; 27, clear and cool; 28, warm and pleasant; 20, warm and drying; 30, clear and warm.

July,—1, clear and warm; 2, warm; 3 and 4, clear and hot; 5 and 6, very hot; 7, clear and hot, wind blew; 8, clear and warm; 9, clear and pleasant; 10, cloudy, rained a little; 11, 12 and 13, pleasant; 14, cloudy; 15, rainy all day; 16, rained all the forenoon; 17, pleasant; 18, clear, thunder shower in afternoon; 19, pleasant; 20 and 21, cool and pleasant; 22 to 24, pleasant; 25 and 26, cloudy; 27, showery all day; 28 and 29, clear and hot; 30, very hot; 31, pleasant.

August,—1, clear and warm; 2, pleasant, cooler; 3, clear, windy and cool; 4 and 5, pleasant; 6, clear and pleasant; 7 and 8, pleasant; 9, warm; 10, very warm; 11, hot; 12, clear and warm; 13, warm, dry and hot; 14, cloudy, slight showers; 15, clear and cool; 16 to 19, pleasant; 20, clear and pleasant; 21 to 23, pleasant; 24, warm and pleasant; 25, cloudy and windy; 26, clear and warm; 27, very hot; 28, hot and dry; 29, hot, cooler in evening; 30, cloudy; 31, cloudy and rainy.

September,—1 and 2, clear and cool; 3, clear and pleasant; 4 and 5, pleasant; 6 and 7, clear and warm; 8, clear and hot; 9, very hot; 10, clear and very warm; 11, clear and cooler; 12, cloudy, rain at night; 13, cooler; 14, cloudy and cool; 15, pleasant; 16, rained all day; 17 and 18, pleasant; 19, rain forenoon, cloudy afternoon; 20, clear and cool; 21, clear and cool, heavy frost last night; 22, cold; 23, rained all day; 24 pleasant; 25, cloudy and rainy; 26, cloudy, warm; 27, clear and very warm; 28, cloudy and rainy; 29, pleasant; 30, clear and pleasant.

October,—1 and 2, clear and cold; 3, cold but pleasant; 4 and 5, pleasant; 6, clear and pleasant; 7, warm and pleasant; 8, clear and warm; 9, clear, warm and pleasant; 10, warm and pleasant; 11; clear, warm and pleasant; 12, clear and warm; 13 and 14, cloudy, 15, clear and colder; 16, clear and cold, windy; 17, cloudy, cold; 18, cloudy; 19, pleasant; 20, clear and very pleasant; 21, windy and cooler; 22, 23 and 24, pleasant; 25 and 26, cloudy; 27, rained all night and all day; 28, cloudy and wet; 29, cloudy, rained hard last night; 30, cloudy and rainy; 31, cloudy and rainy, rained hard in the night, 5th day of rain.

November,—1, cleared away warm; 2, very pleasant; 3, very warm and pleasant; 4, clear and cooler; 5, pleasant; 6, cloudy; 7, cold and windy, rained hard last night and cleared off with a snow

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storm ; 8, cold ; 9, pleasant ; 10 and 11, cloudy ; 12, cloudy, snowed all night ; 13, snowed a little all day, snow 8 in. deep, first sleighing ; 14, 15 and 16, clear and cold ; 17, cloudy and stormy, snow and rain ; 18, snowed hard part of day, rained in afternoon, snow all melted ; 19, very windy and cold, wind N. E. ; 20 to 22, pleasant ; 23, rained all day ; 24, pleasant ; 25, snowed all day, snow damp and melted some ; 26 to 28, clear and cold ; 29, cloudy ; 30, cloudy and warm.

December,—1, clear and cold ; 2, windy and very cold, 18° below to-night ; 3 and 4, clear and very cold, 10° above ; 5, very cold all day, ther. ° ; 6, clear and very cold ; 7, warmer, snowed all day ; 8, clear and cold ; 9, warmer and pleasant ; 10, cloudy ; 11, cloudy and wet ; 12, cloudy ; 13, cloudy and stormy ; 14, pleasant, cooler ; 15, cloudy and stormy ; 16, windy and cold, ther. 10° above ; 17, clear and cold, ther. 2° above ; 18, stormy all day ; 19, pleasant ; 20 and 21, clear and cold ; 22, pleasant ; 23, pleasant morning, snowed in evening ; 24, cloudy and rainy ; 25, cloudy, windy and cold ; 26, cloudy, stormed at night ; 27, very cold ; 28, clear and cold ; 29, clear and very cold ; 30, very cold ; 31, snowed all day, growing warmer at night.

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COLDEST AND WARMEST DAYS OF THE MONTHS OF 1886, AT WINDSOR, VERMONT, BY WM. H. SKINNER.

COLDEST.					WARMEST.				
1886.		MERCURY.			1886.				
Month.	Date.	Morn.	Noon.	Night.	Month.	Date.	Morn.	Noon.	Night.
Jan.....	13	-18°	-12°	-6°	Jan.....	15	40°	50°	45°
Feb.....	6	-24°	-4°	-10°	Feb.....	15	38°	44°	40°
March..	2	2°	10°	6°	March..	31	48°	54°	36°
April...	4	24°	32°	28°	April...	23	46°	76°	60°
May....	13	38°	62°	54°	May ...	30	66°	80°	54°
June...	1	46°	72°	60°	June...	17	76°	90°	84°
July ...	1	45°	76°	70°	July ...	6	78°	90°	84°
Aug ...	18	48°	72°	72°	Aug ...	14	74°	86°	80°
Sept ...	12	34°	54°	40°	Sept....	8	70°	84°	78°
Oct	10	30°	54°	46°	Oct	12	48°	72°	64°
Nov.....	28	8°	32°	24°	Nov ...	1	48°	60°	56°
Dec.....	5	8°	12°	10°	Dec	9	40°	54°	34°

MONTH.	Fair.	Snow.	Rain.	Cloudy.	Deepest snow in inches.	First thunder shower.	Snow in inches.	First snow.
January.....	15	6	1	8	10	.....	22	.....
February.....	14	6	2	6	12	.....	17	.....
March.....	14	5	2	12	8	.....	11	.....
April.....	17	1	2	11	2	.....	2	.....
May.....	20	2	6	5	.....	30	.....	.....
June.....	17	.....	7	4	.....	.....	.....	.....
July.....	17	.....	6	5	.....	.....	.....	.....
August.....	23	.....	4	4	.....	4	.....	.....
September.....	20	.....	4	6	.....	3	.....	.....
October.....	15	.....	9	7	.....	2	.....	.....
November.....	13	4	4	8	12	.....	.....	7
December.....	13	28½	1	9	28½	.....	.....	.....

The thermometer for five days did not get above zero, three days in January and two days in February. The first frost in the fall was on the morning of September 21st, and a heavy frost on the day following.

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CIRCULAR No. 3.

SANITARY SCHOOL HOUSES.

When it is considered that in the school house a large number of children spend a considerable part of almost every day during the greater part of every year, the importance of the location and plan of the house becomes apparent. Here the children are confined during the period of their growth, when the system is most susceptible to influences harmful or healthful; and here they may contract disease or deformity, which will last through life. Hence it becomes a matter of serious importance to build in accordance with the most approved sanitary rules. Perhaps it may cost somewhat more at first, but it will be far more profitable in the end. True economy consists in furnishing conditions for healthy growth, and not in furnishing conditions for disease and arrested development.

The following suggestions and rules have been compiled from papers and reports of individuals and committees, composed of the most eminent sanitarians, who have devoted their time and study to the investigation of these subjects.

1. *Site:*—

The best location for a school house is on an elevation, from which the ground slopes in every direction, a natural mound or knoll, but not on a high hill. The soil should be gravelly, thus affording a natural drainage. Where these natural advantages can not be had, the site selected should admit of and have thorough artificial drainage. It should not be in the vicinity of a marsh, nor any stagnant water, nor on filled ground unless the ground was originally dry and filled with clean gravel. Trees are desirable but not necessary. If they abound they should not be near enough to shade the building, which should get the sun and air freely. Much more light and air are required than for dwellings and shops. The lot should be sufficiently large that not more than one-half of it should be covered by the building, which should be at least sixty feet from any other building. No school house should be built in the vicinity of any mill, factory, machine shop, railroad station, or other place where there is likely to be noise or confusion. The social character of a neighborhood, and moral nuisances are also sometimes necessary to be considered in deciding upon the location of a school house. Where it is possible the lot should be large and furnished with more or less of the common apparatus for outdoor gymnastic exercises. In England the play-grounds around school houses are more spacious than they are in this country. There it is considered that "a failure to provide for physical culture, or to observe the conditions of physical well-being, will vitiate all educational processes and render abortive all attempts to reach the highest intellectual and moral development."

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2. *The Building:*—Plan and arrangement.

The height of the school building above the ground will depend upon the character of the soil; if it is naturally dry, the building may be near the ground; if drainage is necessary, the building should be put upon an elevated foundation. In any event, free circulation of air under the ground floor should be provided for, and the sub-floor space should be perfectly dry. Basement dryness is of more importance in a school building than in a dwelling, inasmuch as the size of the building and its being often close and without fire for a season, conduce to dampness and unwholesome rooms.

The material for construction should be the same as that adapted for the best houses. If brick or stone is used, damp-proof layers are important, as well as wainscoting and deeper furring than usual. Buildings should never be more than two stories high. If a public hall for occasional use is desirable, a third story may be tolerated for this purpose, but should never be used for regular school work. Thirty-eight by twenty-three feet is about the model size and shape of rooms, according to the best authorities, and about twelve feet in height. These dimensions are determined by laws as to light, sound and capacity. This size is adapted to accommodate forty pupils. Experts in education recognize the gain to the individual scholar by limitation of pupils to forty in each room. Sometimes the necessity of the case may require a somewhat larger room, when four or five feet may be added to the width, which, with the addition of one or two feet to the height of the room, will accomodate fifty-six pupils. School rooms ought never to have a ceiling higher than fourteen feet. About twelve, or twelve feet and six inches is a better height. Oblong rooms are usually to be preferred, with length one-third to one-half greater than the width.

The area of window space, if in a city or village with other buildings in the vicinity, should not be less than one-fourth of the floor space. In the open country the window space may be somewhat smaller. The window sills should never be placed lower than three and a half feet from the floor, and the windows should extend upward nearly to the ceiling. It is best to have the light diffuse itself from above the level of the pupils. The upper part of the windows and the ceiling serve to send down the light. Porticos or projecting roofs, or window ornaments should not be placed on the outside so as to in the least obstruct the light. Windows should be placed on the sides of the room. If the room is not over twenty-four feet wide the windows may be upon one side only, and that upon the left of the pupils as they sit at their desks. Light may be admitted from behind the children, but never in front.

The doors should be wide and open outward, and should be on the opposite side of the room from the windows.

Entries should be roomy and halls wide. All stairways should be wide and straight, or with platforms, but never spiral. Stairs should be of easy ascent. Four or five inches rise with a width of tread of twelve to fifteen inches.

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Hard finish is generally best for walls. They should be very smooth, as dust clings to rough surfaces. Paper is too absorbent for school walls.

No school building is perfect, from a sanitary point of view, which does not contain proper facilities for the care of wraps, overshoes and umbrellas. Provision should be made for drying wet garments; and so the wardrobe should be independent of the school room, and provided with a sufficient number of hooks for each child. Damp garments should be hung up where they will dry. These rooms should not be closets; but such as can be thoroughly ventilated.

A wash room is very convenient, perhaps it may be said, necessary. It need not be large, but should be a separate room. It will greatly promote cleanliness.

3. *Water Supply:—*

Children must at all times have plenty of water. The water supply, then, should be abundant, wholesome and convenient of access. Comparatively few school houses are so situated that pure fresh water can be obtained without resorting to wells. Hence it becomes a matter of consequence that the wells are beyond the possibility of contamination by any source of filth. If a naturally healthy and elevated site has been obtained, the well may be placed at a distance of not less than one hundred feet from the building. But sometimes even a much greater distance is not safe against pollution of the water. It has been demonstrated that under favoring circumstances water, holding in solution poisonous matter, may pass through earth for a distance of over a half mile. The well or spring from which water is taken should not be near any barn-yard, hog-pen, privy, grave-yard or other source of impurity.

4. *Heating and Ventilation:—*

These may be considered together as they are so intimately connected, and as ventilation is so often accomplished by means of the heating apparatus. But neither will be treated of very extensively, and only or mainly in connection with small school houses. Of course when a large building, containing a large number of rooms, is to be constructed, an architect is employed, whose special duty it is to be conversant with these subjects and make the plans according to the most approved hygienic methods.

In common country school rooms the ordinary stove is used for heating. This need not be changed, but it should be provided with a sheet iron, or galvanized iron jacket, extending high enough above the stove that the air may be well heated, and leaving a space from four to six inches all around the stove. This jacket should be open at the top and closely fastened to the floor at the bottom. A pipe not less than six inches in diameter should pass through the floor under the stove and be carried out through the underpinning to the external air. Thus a current of pure air, from out of doors, warmed by the stove will be constantly poured into the room, and will diffuse itself so that those most remote from the stove will be warm and those nearest will not be overheated.

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Windows and doors are the natural ventilators. But they should be used only to flush the rooms with fresh air during recess or after school hours. When the jacketed stove is used, the foul air may be got rid of by lowering the windows from the top. Or better still, by raising the lower sash and placing under it a strip of board so that the air may pass out between the upper and lower sash.

It is customary to say that each pupil should have so many square feet of floor space, or so many cubic feet of air space, variously stated at fifteen to twenty square feet, and at 175 to 300 cubic feet of air. But the essential point is that each pupil should have from twenty-five to thirty cubic feet of fresh air to breathe every minute. Of course, the oftener the air is changed the smaller may be the space occupied. But how to change the air without creating unpleasant and dangerous draughts is the grand problem of ventilation. In rooms such as those mentioned above, the entire air will, by ordinary means, be changed about three times an hour, without creating an objectionable current. But, to give each pupil the requisite amount of fresh air, it should be changed six or eight times in an hour. Foul air, particularly among children, causes dullness, nervousness, headache, colds, catarrh, and numerous other disorders. Hence foul air must be got rid of in some way. The jacketed stove with the partially opened windows will accomplish this for single rooms, although imperfectly, especially if the rooms are large. But if several rooms are to be heated by a furnace in the basement, special flues must be made for the egress of the bad air. It is better to have the registers for the inlet of warm air on the inner sides of the rooms, and above the middle. Thus the warm air will pass across the room toward the windows, the cool air from which will give a tendency to fall downwards, then flowing along the floor, still retaining considerable warmth, it will keep the feet of the pupils warm, and will pass out of registers near the floor, in the wall of the room, upon the same side in which are the inlets. The registers of egress must be somewhat larger than those of ingress, and must be connected with flues, extending to the roof, and that can be heated, thus creating a current which will draw out the bad air. The smoke pipe of the furnace may be utilized for the heat necessary to create the draught for the outlet flues. Unless the upward draught be very considerable the flues must be very large. As commonly made the ventilating flues, even in rooms supposed to be well ventilated, are so small as to be of very little use.

5. *Drainage:—*

The importance of good drainage is so obvious and so generally admitted that but little need be said upon this topic. Unless the location be elevated and the soil dry and porous, there will be need of artificial drainage. The ground should be thoroughly underdrained so that after a rain the surface will very soon become dry, and leave no pools or puddles of water in which organic matter may putrefy and contaminate the air. And particularly should

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the ground underneath the building be carefully protected, so that no water from the roofs or from the ground around can penetrate the cellar or the sub-floor space rendering it damp and unwholesome.

6. *Privies and Water Closets :—*

These are usually decided abominations, detrimental to the health and often to the morals of the scholars. Still, as they can not be dispensed with, they must be regulated in a manner to be subject to the least possible objections. Ever since Moses led the Israelites out of Egypt, the disposal of human excrement has been a question of decided interest for mankind, and the world is just beginning to find out that the method which he directed is the best : Cover it with dry earth. Deut. XIII.: 12–13. Except well made water closets, the earth closet, properly constructed, is the most nearly perfect of anything yet devised. The essential points are, a receptacle completely impervious to moisture, and plenty of dry earth in powder. The receptacle should be of easy access, so that the contents can be readily removed. It should be large enough to hold the quantity which accumulates during a week, and should be emptied at the end of every week. Dry, finely powdered clay is by far the best, but loam will answer. Sand and gravel are not suitable. In a farming community almost any one can afford to furnish the dry earth and empty the receptacles for the benefit of his land, since, if properly attended to, the contents are no more offensive than dry ashes. In places where water supply is abundant and sewerage is good, water closets are undeniably the most desirable But these require an experienced plumber, who understands what is necessary. The location of the privies or closets should be near but not in the school building. Separate ones should be provided for the different sexes, and the passage to them, certainly for the girls, should be covered.

7. *Seats and Desks :—*

Seats should be single, and of such height that the pupil's feet can rest on the floor. If too high the pupil should have a foot-rest. The back of the seat should be curved, adapted to the curve of the body. Especially should the lower half of the spine be supported. The seat should be broad enough to support the greater part of the thigh.

Desks ought to be of such a height that the elbows may rest upon them without displacing the shoulders. The front of the desk ought to be perpendicular to the edge of the seat, or project over the seat for an inch or two. No desk ought to be more than once and one-half the distance from the window that the top of the window is from the floor. The top of the desk ought to incline upward at an angle of twenty degrees for writing. For reading the angle of forty degrees is better. If the top is not adjustable it may incline at thirty degrees. It ought to support the paper or book at a distance of twelve or sixteen inches from the eyes. It would be

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well that the desk or the seat, or some part thereof, should be movable at pleasure, so that although the desk usually overhangs the seat, the scholar may be able at any time to stand upright in his place.

8. *Blackboards:—*

No room where recitations are held can be considered as properly furnished without these necessary accompaniments. And their location is a matter of great importance. They should be placed on the side of the room opposite to the windows, never between, or even upon the same side with the windows. They should be of ample size, and of a dead, not glossy black. Letters and figures, well made and fully two inches in height, cannot be seen distinctly over thirty feet.

A pamphlet has been published by the American Public Health Association upon "School Hygiene" or "The Sanitary Conditions and Necessities of School Houses and School Life," by D. F. Lincoln, M. D. It would be well if every Town Superintendent of Schools, and every district school committee should read this essay. By enclosing ten cents in postage stamps, or otherwise, to Dr. Irving A Watson, Secretary American Public Health Association, Concord, N. H., he will forward a copy to any address.

A. H. CHESMORE, M. D., PRESIDENT, Huntington,
J. H. HAMILTON, M. D., Richford,
C. L. ALLEN, M. D., SECRETARY, Rutland.

State Board of Health.

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EXTRACTS FROM REVISED LAWS.

CHAPTER 128.

REGISTRATION OF BIRTHS, MARRIAGES, DIVORCES AND DEATHS.

DUTIES OF SCHOOL DISTRICT CLERKS.

SECTION 2547. The school district clerks in each town, or in towns not divided into districts the clerk of the school board, shall annually, in the month of January, ascertain the births and deaths which occurred in their respective districts, during the year next preceding the first day of January; and shall report to the town clerk on or before the first day of February the date and place of birth of each child, its name and sex, and name and residence of its parents, and the occupation of the father. They shall also report the date, place and disease or apparent cause of each death, the name and sex of the deceased, whether married or single, his age in years, months and days, place of birth, the name of his parents and his occupation if over fifteen years of age.

SEC. 2548. If a district clerk or clerk of school board fails to make the required return or makes an incomplete or incorrect return, he shall forfeit all compensation therefor and be fined not less than five dollars; and the town clerk shall forthwith cause prosecution to be commenced against him in the name of the state to recover such penalty.

SEC. 2549. So much of this chapter as relates to the duties of school district clerks in collecting and making returns of births and deaths, shall not apply to the city of Burlington.

DUTIES OF TOWN CLERKS.

SEC. 2550. Town clerks shall carefully examine the returns of births and deaths made to them by the clerks of the several school districts; and if the returns are made up and returned, agreeably to law, they shall furnish the school district clerk so complying with the requirements of law, a certificate to that effect; and on presentation of such certificate to the selectmen, they shall draw an order on the town treasurer to pay such school district clerk, or clerk of school board, fifteen cents for each birth or death returned. Provided, however, that town clerks may, if they elect, pay said fees and take receipts therefor; and on presentation of such receipts to the selectmen, the selectmen shall draw an order on the town treasurer to pay the town clerks all sums so paid.

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SEC. 2551. Town clerks shall number and record in the order in which they are received the returns of births, marriages and deaths made to them, and the record shall show the time when it was made. They shall annually in the month of March transmit to the secretary of state a certified copy of such record made for the year next preceding the first day of January.

SEC. 2552. The clerk of each town shall receive from the treasury of the town five cents for recording each birth and death, and ten cents a folio for copying the same and the marriage records in his office, for the use of the secretary of state; provided said clerks comply with the provisions of this chapter in all respects.

SEC. 2553. If a town clerk fails to comply with the requirements of law in relation to making returns of births, marriages and deaths to the secretary of state, he shall be fined not less than twenty dollars.

DUTIES OF COUNTY CLERKS.

SEC. 2554. The clerks of the county courts shall on the last day of December in each year make return to the secretary of state of the number of divorces granted in their respective counties during the year ending on that day.

DUTIES OF THE SECRETARY OF STATE.

SEC. 2555. The secretary of state shall prepare and furnish to town clerks blank forms to be used as books of records, according to the provisions of this chapter, and also blank forms of returns, and shall accompany the same with the necessary instructions and explanations; and the town clerks shall distribute the same as directed by the secretary.

SEC. 2556. The secretary of state shall receive the returns made to him in pursuance of this chapter and cause the same to be bound in one or more volumes; and at an expense to the state not exceeding one hundred dollars per annum, shall cause to be prepared therefor such tabular results and summary with indexes thereto as will render them of practical utility, and the commissioners of printing are hereby authorized and directed to contract for, and procure the printing and publication of one thousand copies of the same, annually, on or before the first day of October in each year.

SEC. 2557. The secretary of state shall cause prosecutions to be commenced in the name of the state, in an action on the case founded on this chapter, to recover any penalty or forfeiture imposed by the provisions therein whose recovery is not otherwise provided for.

MISCELLANEOUS.

SEC. 2559. When a male resident of this state is married without the state, he shall within sixty days deposit with the clerk of the town where he resides a certificate embracing the statistics required by law in marriage certificates, and if he does not deposit such certificate he shall forfeit not less than ten dollars.

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SEC. 2560. The head of a family who moves into and becomes a permanent resident of this state, may cause to be recorded in the office of the clerk of the town where such residence is, a certificate of his marriage embracing the statistics required by law; and may also cause to be recorded the birth of any of his children born without the state with the statistics relating to such births required by law, and shall make oath to the correctness of such statistics. But such record shall not be returned to the secretary of state.

SEC. 2561. Town clerks shall record matter submitted to them for record under the two preceding sections, and shall receive the same fees for such record as provided by law for similar records.

CHAPTER 172.

PRACTICE OF MEDICINE AND SURGERY.

SEC. 3908. Medical societies organized under a charter from the general assembly shall, at each annual session, elect a board of censors, consisting of three members, who shall hold their office till others are elected; which board may examine and license practitioners of medicine, surgery or midwifery.

SEC. 3909. A practitioner of medicine, surgery or midwifery who, by sign or advertisement, offers his services to the public as practitioner of either medicine, surgery or midwifery, or who, by such sign or advertisement, assumes the title of doctor, shall obtain a certificate from one of such medical societies, either from a county, district or state society.

SEC. 3910. A person not a resident of this state, who has not received a diploma from a chartered medical college, shall obtain a certificate from a board of censors in this state before he shall be permitted to practice the medical art in this state.

SEC. 3911. Each board of censors shall issue certificates without fee to physicians and surgeons who furnish evidence, by diploma from a medical college or university, or by certificate of examination by an authorized board, which satisfies said censors that the person presenting such credentials has been after due examination, deemed qualified to practice the branches mentioned in such diploma or certificate.

SEC. 3912. The censors of each medical society aforesaid shall, in their discretion, notify practitioners of medicine, surgery or midwifery, of the terms of this chapter, and shall require such persons to comply therewith, within thirty days after such notification, or within such further time as is allowed by the censors, not exceeding ninety days.

SEC. 3913. The certificate shall set forth that said censors have found the person to whom it is given qualified to practice the branches of medical art mentioned in it, and shall be substantially in the following form:

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No. CERTIFICATE.

STATE OF VERMONT, } This may certify that the undersigned
County of ——— } board of censors have found ———, of ———, in the county of———, and state of ———, qualified in the following branches of the medical profession :——— ———, and therefore license him to practice said branches within this state.

} Board of Censors
of
} Medical Society.

SEC. 3914. The person to whom a certificate is thus issued shall cause the same to be recorded in the clerk's office of the county in which he resides, or if not a resident of the state, in the county in which he obtains such certificate, in a book to be kept by the county clerk for that purpose and to be called the medical register of ——— county. The fee for recording such certificate shall be twenty-five cents.

SEC. 3915. A certificate issued by a board of censors, as herein provided, shall be valid throughout the state after being duly recorded. Said censors may revoke or annul a certificate, if, in their judgment, the person holding it has obtained it fraudulently, or has forfeited his right to public confidence, by conviction of crime.

SEC. 3916. A person who practices medicine, surgery or midwifery in the state or signs a certificate of death for purposes of burial or removal, unless authorized so to do by a certificate issued and recorded as herein provided, shall, for the first offense, be fined not less than fifty nor more than two hundred dollars, and for a subsequent offense not less than two hundred nor more than five hundred dollars; which fine may be recovered by an action of debt for the use of any person who sues therefor, or by an indictment.

SEC. 3917. No person practicing either of the branches of medicine, surgery or midwifery within this state, shall be permitted to enforce, in the courts, the collection of a fee or compensation for services rendered, or medicine or material furnished, in the practice of any of the branches, for which he has not a certificate as provided in this chapter.

SEC. 3918. This chapter shall not apply to the practice of dentistry, nor to the practice of midwifery by women in the town or locality in which they reside, nor to those practitioners of medicine who had resided and practiced medicine in the state five years previous to Nov. 28, 1876.

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CHAPTER 173.

PRESERVATION OF PUBLIC HEALTH.

SMALL POX.

SEC. 3919. If a person is infected with the small pox, the selectmen of the town shall immediately provide a place remote from inhabitants, and remove him to such place, unless in the opinion of the attending physician the life of such person would be endangered by the removal; and they shall, by requiring immediate vaccination and otherwise, take measures to prevent the spread of the disease.

SEC. 3920. If a person is infected with the small pox near the line of a town so as to expose the inhabitants of an adjoining town, the selectmen of the adjoining town may exercise the authority and take the precautionary measures prescribed in the preceding section.

SEC. 3921. The selectmen shall provide physicians, nurses and necessaries for such infected person, as the nature of the case requires, at the expense of such person, if of sufficient ability to pay the same, otherwise at the expense of the town in which such person has a settlement, if he has a settlement in this state, if not, at the expense of the town in which such person is.

SEC. 3922. If a person, knowing himself to be infected with the small pox, comes within a town, without previously obtaining consent of the selectmen, or if a person knowingly and voluntarily communicates or receives the infection of small pox in a town without the consent and approbation of the selectmen, the person so offending shall be fined not more than two hundred dollars.

SLAUGHTER HOUSES.

SEC. 3923. No person shall carry on the business of butchering in a building without the approbation in writing of the board of civil authority, describing the building and limiting the time during which such person shall carry on such business; and if a person carries on such business without such approbation or after the expiration of the time so limited, he shall forfeit not more than five hundred dollars.

NUISANCES INJURIOUS TO HEALTH.

SEC. 3924. The selectmen shall make such regulations respecting nuisances, sources of filth and causes of sickness within their respective towns as they judge necessary for the public health, and shall destroy, remove or prevent such as may be injurious to the public health; and a person violating such regulations shall forfeit not more than one hundred dollars.

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SEC. 3925. When such nuisance, source of filth, or cause of sickness is found on private property, the selectmen shall order the owner or occupant thereof, at his own expense to remove the same within twenty-four hours; and if he neglects to do so, he shall forfeit not more than one hundred dollars, and the selectmen may cause such nuisance, source of filth or cause of sickness to be removed and the expense shall be paid by the owner or occupant or such other person as caused or permitted the same.

BURIAL OF ANIMALS.

SEC. 3926. If a person puts or causes to be put a dead animal or animal substance into, or upon the bank of, so that it is drawn or washed into, a lake, pond, running stream or spring of water and suffers the same to remain he shall forfeit not more than twenty dollars and not less than five dollars, with costs, to the town in which the offense is committed, to be recovered before a justice.

SEC. 3927. If a person puts or causes to be put on the premises of another or on his own premises, a dead animal or animal substance and suffers the same to remain unburied within one hundred rods of a dwelling house or public road, between the months of March and December following he shall be punished as provided in the preceding section.

SEC. 3928. Grand jurors shall prosecute offenses against the two preceding sections; but prosecutions therefor shall be commenced within three months from the time of the commission of the offense if the respondent remains during that time in the state.

CHAPTER 174.

SALE OF OILS.

SEC. 3929. No person shall mix for sale, naphtha and illuminating oils, or sell or offer for sale such mixture, or sell or offer for sale, except for purposes of re-manufacture, illuminating oils made from coal or petroleum, which will ignite at a temperature of less than one hundred and ten degrees Fahrenheit, to be ascertained by the application of Tagliabue's, or some other approved instrument; and a person so doing shall be fined not more than one hundred dollars or imprisoned not more than one month, or both; and shall also be liable to a person suffering damage from the explosion or ignition of such oil, thus unlawfully sold; and such oil, thus unlawfully sold or kept or offered for sale, with the casks or packages containing the same, shall be forfeited and sold for the purposes of re-manufacture; one-half of the proceeds of such sale to go to the state and the other half to the informer.

SEC. 3930. A person who sells or keeps or offers for sale, naphtha, under the name of oil, shall be liable to the penalties and subject to the liabilities set forth in the preceding section.

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SEC. 3931. The selectmen of a town, or the bailiffs or trustees of a village, where oils are sold, upon the petition of five or more inhabitants, shall appoint annually one or more suitable persons, not interested in the sale of said oils, as inspectors thereof, and fix their compensation, to be paid by the parties requiring their services.

SEC. 3932. An inspector, before entering upon the duties of his office, shall be sworn, and when called upon by a vendor, purchaser, or by any officer mentioned in the following section, to test such oils, shall do so with reasonable dispatch, by applying the fire test, as indicated and determined by Tagliabue's pyrometer, or some instrument equally accurate. An inspector guilty of fraud, deceit or culpable negligence in inspecting such oils, shall be punished as provided in section 3694 [§ 3929].

SEC. 3933. The selectmen and police of towns, and the bailiffs, or trustees and police of villages, in which such inspectors are appointed, or any one of said officers within their respective towns and villages shall cause persons violating the provisions of this chapter to be prosecuted therefor.

CHAPTER 175.

INQUESTS ON THE DEAD.

SEC. 3934. When any one of the selectmen is informed that the dead body of a person, supposed to have died by casualty or violence, is found lying within the town, he may, if in his opinion the public good requires it, apply to a justice of the county, who shall inquire into the cause and manner of the death of such person.

SEC. 3935. Such justice may issue a subpœna and an attachment, if necessary, to bring witnesses before him to give evidence as to the manner and cause of such death.

SEC. 3936. Such justice shall take the substance of the testimony of each witness in writing, and return the same to the county court next to be holden in such county, with an account of the fees and expenses of such inquest.

SEC. 3937. In case of felonious killing the justice taking such testimony may bind, by way of recognizance, witnesses in the case for their appearance before the county court next to be holden in such county.

INQUESTS ON THE BURNING OF BUILDINGS.

SEC. 3938. When a selectman of a town or the mayor of a city is informed that a building, pile of wood, lumber or bark in such town or city has been set fire to or burned, and, as believed, wilfully and maliciously, a majority of the selectmen or such mayor may, if the public good requires it, apply to a justice of the county who shall inquire into the cause of said fire and the manner in which it was set and the property burned.

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SEC. 3939. The justice shall make such inquiry and make his return as provided in case of inquests on the dead and the expenses thereof and the fees shall be paid in the same manner.

CHAPTER 199.

OFFENCES AGAINST PUBLIC HEALTH.

SEC. 4256. A person who knowingly sells diseased, corrupted or unwholesome provisions, for food or for drink, shall be imprisoned not more than six months, or fined not more than three hundred dollars.

SEC. 4257. A person who kills or causes to be killed, with intent to sell the meat thereof for family use, a calf less than four weeks old, or knowingly sells or has in his possession such meat with intent to sell the same in the state or to send the same for such use to any foreign market, shall be punished as provided in the preceding section.

SEC. 4258. A person who fraudulently adulterates, for the purpose of sale, bread or liquor or any substance intended for food or drink, with a substance injurious to health, or who knowingly sells such adulterated food or drink, shall be imprisoned in the state prison not more than two years, or fined not more than three hundred dollars; and the articles so adulterated shall be forfeited and destroyed under the direction of the court.

SEC. 4259. A person who fraudulently adulterates, for the purpose of sale, a drug or medicine, so as to render it injurious to health, or sells the same knowing it to be adulterated, shall be imprisoned in the state prison not more than two years, or fined not more than four hundred dollars; and such adulterated drugs or medicines shall be forfeited and destroyed under the direction of the court.

SEC. 4260. A person who sells arsenic, strychnia, corrosive sublimate, prussic acid, or chloroform, without the written prescription of a physician, shall keep a record of the date of such sale, the article, the amount thereof sold, and the person to whom delivered; and for each neglect shall be fined not more than one hundred dollars. Whoever purchases such article and gives a false name to the seller, shall be fined not more than fifty dollars.

SEC. 4261. A person who administers, attempts to administer, or causes to be administered to a person, chloroform, sulphuric ether, or any anæsthetic agent, with intent to commit a crime or offense; or who secretly commits or attempts to commit a crime or offense against a person or the property of a person rendered insensible or unconscious or incapable of resistance by such anæsthetic agent, shall be imprisoned in the state prison for life or for not less than three years.

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MISCELLANEOUS.

SEC. 4247. A person who wilfully administers, or advises or causes to be administered anything to a woman pregnant or supposed by such person to be pregnant, or employs or causes to be employed any means with intent to procure the miscarriage of such woman, or assists or counsels therein, unless the same is necessary to preserve her life, shall, if the woman dies in consequence, be imprisoned in the state prison not more than twenty years and not less than five years, and if she does not die in consequence shall be imprisoned in the state prison not more than ten years and not less than three years; but the woman whose miscarriage is caused or attempted shall not be liable to the penalties prescribed by this section.

SEC. 3210. This chapter shall not authorize the acquiring of land for the purpose of the enlargement or establishment of a burial ground so as to bring the same within twelve rods of a dwelling house, and no remains shall be buried in such burial grounds so enlarged or established, within twenty rods of a dwelling house.

SEC. 4022. If any person during the existence of said board shall sell or offer to sell any cattle or other domestic animal, or any part or parts thereof, known to him to be infected with any contagious disease, or with any disease dangerous to the public health, he shall be fined not more than one thousand dollars, or be imprisoned not exceeding two years, or both, at the discretion of the court.

SEC. 3809. If a person by himself, clerk, servant or agent, or if an authorized agent of any town, knowingly sells, furnishes, gives away or distributes to others intoxicating liquor which is impure or adulterated he shall forfeit to the state not less than ten dollars and not more than three hundred dollars.

SEC. 4165. A person who knowingly sells or furnishes or offers to sell milk diluted with water or adulterated, shall forfeit to the person to whom such milk is sold or furnished not more than one hundred dollars and not less than twenty-five dollars, with costs, to be recovered in an action on this statute before a justice.

SEC. 4166. A person who knowingly sells, supplies or brings to be manufactured to a butter or cheese manufactory in the state milk diluted with water, or adulterated, or milk from which cream has been taken, or keeps back part of the milk known as "strippings"; or knowingly brings or supplies milk to a butter or cheese manufactory, that is tainted or partly sour from want of care in the keeping of strainers, or vessels in which said milk is kept; or a butter or cheese manufacturer who knowingly uses or directs his employees to use cream from the milk brought to said butter or cheese manufacturers, without the consent of the owners thereof, shall forfeit not less than twenty-five dollars, and not more than one hundred dollars, with costs, to be recovered in an action founded upon this statute, before a justice, in the name and for the benefit of those upon whom such fraud is committed.

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No. 84, LAWS OF 1884.

It is hereby enacted by the General Assembly of the State of Vermont:

SECTION 1. A person who delivers to another person or corporation at a point within this state, for transportation to a point within or without the state, the dead body of a person, shall at the time of such delivery furnish to the person or to the receiving person of the corporation, to whom it is delivered for such transportation, a certificate signed by a physician legally qualified to practice medicine and surgery in this state, or a certificate signed by the attending physician if the deceased died in another state or country, which certificate shall accompany such dead body along the route of such transportation, certifying that the person whose body is so delivered for transportation did not die of small pox, diphtheria or scarlatina. But such certificate shall not be required if the dead body is enclosed in a metalic casket hermetically sealed.

SEC. 2. A person or corporation that transports the dead body of a person without having first demanded and received the certificate required by the provisions of this act shall be fined not more than three hundred dollars nor less than fifty dollars; and a person or corporation delivering such dead body for transportation, unless the same is accompanied by the certificate required by the provisions of this act, shall be fined not more than two hundred dollars nor less than fifty dollars.

SEC. 3. This act shall take effect from its passage.

Approved Nov. 26, 1884.

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INDEX.

Act of Legislature creating State Board of Health..... 5
Abbott, Dr. S. W., Paper at N. H. Sanitary Convention... ... 10
Adams, A. C., Letter from..... 14
Adams, W. R., Report of Weather.. 111
Air Supply of School Rooms..... 10
Allen, Dr. Joel, Report from..... 56
Angell, Prof. E. R., Paper at N. H. Sanitary Convention..... 12
Andrews, Dr. B. I., Report from..... 65
Avery, Dr. J., Report from..... 54

Baxter, Dr. E. K., Report from..... 31
Belden, Dr. H. D., Report from..... 58
Bennington Cattle Disease..... 15
Bennington, Temperature at..... 109
Berry, Dr. J. J., Paper at N. H. Sanitary Convention..... 12
Bethel, Weather at..... 111
Burial of Animals..... 132
Burial in Village..... 17
Burial vs. Incineration..... 11
Brewster, Dr. J. D., Report from..... 28
Brooks, Dr. S. T., Report from..... 63

Campbell, Dr. E. R., Report from..... 29
Canfield, Dr. W. B., Letter from..... 13
Carpenter, Dr. C. H., Report from..... 30
Carville, Dr. H. D. W., Paper at N. H. Sanitary Convention.. 13
Cattle Disease at Bennington 15
Chaffee, Dr. F. E., Report from..... 36
Chesmore, Dr. A. H., Report from..... 64
Childs, Dr. W. F., Paper at N. H. Sanitary Convention 10
Cilley, Dr. F. H., Report from..... 49
Circular No. 1..... .8, 18
Circular No. 2..... ...16, 25
Circular No. 3..... .....17, 121
Climate of Vermont..... 67
Compost Heaps in Villages 17
Conn, Dr. G. P., Paper at N. H. Sanitary Convention... . .. 12
Consumption, Paper on..... 12
County Clerks, Duties of 128
Cows, Milk from Diseased..... .. 11
Crane, Rev. Dr. C. B., Paper at N. H. Sanitary Convention.. 12

Digitized by Google

Cutting, Dr. H. A., Report from.. 33
Cutting, Dr. H. A., Vermont Climate..... 67
Cutting, Dr. H. A., Meteorological Tables..... 72

Day, H. C., Weather Report..... 109
Davenport, Dr. Geo., Report from..... 60
Davis, Dr. B. W., Report from..... 45
Diphtheria..... 22
Diseased Cows, Milk from..... 11
Disinfectants, Paper on..... 10
Disinfecting Solutions..... 24
Dodge, Dr. I. S., Report from 47
Dyer, Dr. O. G., Report from.... 62

Eyes, Testing of, of School Children..... 13

Fever, Typhoid..... 22
Fever, Typhus..... 22
Fosburg, Dr. D., Report from..... 42

Governor, Telegram from..... 14
Goodall, Dr. F. W., Report from..... 59

Hamilton, Dr. J. H., Report from..... 66
Harmonious Development..... 11
Haynes, Dr. B., Report from..... 46
Human Remains, Removal of..... 14

Incineration vs. Burial..... 11
Inquests on the Dead..... 133
Inquests on the Burning of Buildings..... 133

Jackson, Dr. J. H., Report from..... 38
Johnson, Dr. R. T., Report from..... 31

Kenyon, Dr. H. B., Report from..... 43
Kenyon, Dr. H. B., Report of Weather 116
Kenney, Dr. F. C., Report from..... 50

La Due, Dr. F. L., Report from..... 52
Legislature, Act of..... 5
Lengfeld, Dr. B. E., Report from..... 44
Linsley, Dr. J. H., Letter from..... 9

McLean, Dr. R. A., Letter from..... 15
Manchester, N. H., Meeting at..... 10
Manchester, Sanitary Needs of..... 10
Martin, Dr. E. H., Report from..... 48
Marvin, Col. T. E. C., Paper at N. H. Sanitary Convention.. 11
Measles..... 21
Meetings of the Board.....8, 10, 17

Digitized by Google

Meteorological Tables..... 72
Miles, Dr. J. T., Report from..... 51
Miscellaneous..... 135

Newton, Dr. J. P., Report from..... 40
Noah, Brother, Paper at N. H. Sanitary Convention..... 10
Nuisances..... 23
Nuisances Injurious to Health..... 131

Offences against Public Health..... 134

Peck, Dr. C. W., Report from..... 41
Perry, Dr. C. C., Report from..... 35
Physical Education..... 11
Physical Training..... 12
Practice of Medicine and Surgery..... 129
Proceedings of Meetings of the Board.....8, 10, 17
Pulpit and Sanitary Reform..... 12

Ranney, Dr. S. E., Report from..... 34
Ranney, Dr. S. E., Report of Weather..... 114
Removal of Human Remains..... 14
Revised Laws, Extracts from..... 127
Rugg, Dr. D. F., Report from..... 52

Sale of Oils..... 132
St. Johnsbury, Temperature at..... 103
Sanitary Needs of Manchester, N. H..... 10
" Reform, Pulpit and..... 12
" School Houses..... 121
Scarlet Fever..... 21
School Rooms, Air Supply of..... 10
Schools, District Clerks, Duties of..... 127
Secretary of State, Duties of..... 128
Sheldon, Report from..... 46
Skinner, Wm. H., Weather Report..... 120
Slaughter Houses.....18, 23, 131
Smallpox.....18, 20, 131
Somers, Dr. A. B., Report from..... 45
Strobell, Dr., Report from..... 55

Temperature at St. Johnsbury..... 103
Tobias, Dr. J. J., Report from..... 39
Town Clerks, Duties of..... 127
Transmission, Letter of..... 3
Transportation of Dead Bodies, Law of 1884..... 142
Typhoid Fever..... 22
Typhus Fever..... 22

Varney, Dr. W. H. H., Report from..... 33
Vermont Climate..... 67

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